

**INTEGRATION OF INDIGENOUS KNOWLEDGE SYSTEMS IN THE CURRICULUM FOR
BASIC EDUCATION: POSSIBLE EXPERIENCES OF CANADA**

BY

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DECLARATION

Student Number: **3525-361-4**

I declare that **INTEGRATION OF INDIGENOUS KNOWLEDGE SYSTEMS IN THE CURRICULUM FOR BASIC EDUCATION: EXPERIENCES OF SOUTH AFRICA AND Canadas** my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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(Ms)



DATE

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“We can’t solve problems by using the same kind of thinking we used when we created them.”

- Albert Einstein (2014)

ABSTRACT

This study is a meta-analysis of the transformation of the curriculum for basic education in South Africa. The integration of indigenous knowledge systems (IKSs) in the curriculum is one of the reconciliatory practices adopted in an effort to deal with the rights of indigenous people globally. The study analysed cases relating to IKSs and the curriculum in Canada for a case reference in juxtaposition with South Africa, in particular. Examples of cases drawn from elsewhere in the world have also been included briefly to justify the researcher’s claims for the urgent integration of IKSs into the curriculum, which complies with the human rights course of the rights of indigenous people. Cognitive imperialism – in the form of residential schools and their assimilation policies, which functioned in the context of an informal apartheid system as was the case in South Africa with Bantu education – has been an obstacle to transformation of the curriculum in the education system in Canada.

However, the Canadian government of the day has been held to account for recognising the knowledge of the indigenous people (IP) of Canada. In South Africa, the curriculum continues to be characterised by the “mute” tendencies of perpetuating a colonial-type of curriculum, which is still being European in nature and is largely excluding African interests and cultural practices. The affirmation of the United Nations Organisation’s (UNO 2007) advocacy for recognising the rights of indigenous people by means of various international forums motivated a number of scholars globally to shift their attention to a research agenda on IP issues such as their IKSs in relation to education systems that should be transforming their curricular programmes. This study forms part of that indigenous research agenda by proposing that IKSs be integrated into the curriculum for basic education in South Africa, in response to the UNO’s declaration on crucial guidance to developing societies for transforming their education systems to include relevant curricula related to IP.

The aim of this study is to explore ways in which the curriculum for basic education in South Africa can be transformed by, among other things, changing the paradigm of knowledge production

through emerging concepts in developmental education and using, on the way to recovery, experiences of assimilation in the education system of South Africa, with reference to experiences from Canada, in particular, and elsewhere. An in-depth literature study relating to IKS perspectives of integration in the curriculum, and its implication for transformation in the basic education curriculum in South Africa, was done. The qualitative research approach was used and a cultural phenomenological design was used. Data were collected through a desk research, including pre-meta-analysis (PMA), meta-analysis (MA), in-depth desk research (IDR), and case studies (CSs). The collected data were investigated by means of a pre-meta-analysis, which demonstrated how the transdisciplinary approach can be used to immerse IKS in such a way that it may enable indigenous people to define their own perspectives instead of relying solely on Western research concepts of anthropology and history theorists, which have relegated IKSs to something “exotic”.

The synthesis of data in this study “opened a window” to the researcher, which also assisted the researcher to understand the concept of “coming to knowing”¹ as an antithesis of the language of conquest that is used in the hidden agenda of assimilation in a curriculum that continues to marginalise the representation of IKSs. The transformation of the curriculum in the education system of South Africa is a political initiative driven by government, by virtue of the establishment of the South African Chairs Initiative (SACChI) which has been entrusted with the task of developing education in the country in the different disciplines. One of the driving concepts of this particular chair, the South African Chair Initiative in Development Education (SACChI-DE), is the methodology of immersion that is based on the notion of “transformation by enlargement” (TbE).

Using this methodology, the emergence of new concepts in transformative education is propagated, which, according to the findings of this study, may reverse the negative situation in which the indigenous worldviews is erased for indigenous learners (IL) throughout the world. The findings were used to invoke the attention of the Department of Basic Education (DBE), for them to consider validating the newly emerging concepts of the SACChI-DE, which can make a meaningful contribution to the guidelines for a suggested, Afriko-continuum curriculum for basic education at the foundation level.

KEY WORDS: Integration, indigenous knowledge systems, Western science; basic education; cognitive justice; curriculum; assimilation; transformation by enlargement; Afrikology

¹Peat’s (2005:55–56) process of “coming to knowing” that is better represented “than by a static noun” is attempting to answer the questions about the nature of existence in the context of knowledge within traditional society as not being related to books, but to life.

ABBREVIATIONS

ANKN– ALASKAN

ANC– African National Congress

BE – Bantu Education

CBD–Convention on Biodiversity

CEPD–Centre for Education Policy Development

CRC–Convention on the Rights of the Child

DST–Department of Science and Technology

DBE–Department of Basic Education

DoE–Department of Education

AU–African Union

GR–Genetic Resources

ECE–Early Childhood Education

ESD–Education for Sustainable Development

IC–Indigenous Communities

IK–Indigenous knowledge

IKS–Indigenous knowledge systems

IL–Indigenous Learners

IP– Intellectual Property

IPCC – Inter-Governmental Panel on Climate Change

LLL – Long Life Learning

LI – Language of Instruction

LOLT–Language of Teaching and Learning

MDG– Millennium Development Goals

NCS– National Curriculum Statement

NEPAD – New Partnership for Africa’s Development

NQF– National Qualifications Framework

NRF– National Research Foundation

OECD– Organisation for Economic Co-operation and Development

Pakeha – White New Zealanders of European origin

RDP– Reconstruction and Development Programme

RPL – Recognition of Prior Learning

SCERC–SARCHI Community Engagement Research Community

SADC – Southern African Development Community

SAQA– South African Qualifications Authority

SARCHI-DE– South African Research Initiative Development Education in Development
Education

SEG– Sustainable Economic Growth

SGBs– School Governing Bodies

SLI– Second Level Indigenisation

TbE– Transformation by Enlargement

“terra nullus”—Is a Latin term that means land belonging to nobody or no man's land. In International law, a territory which has never been subject to the sovereignty of any state, or over which any prior sovereign has expressly or implicitly relinquished sovereignty.

Township—In (South Africa) a suburb or city predominantly occupied by black, formerly officially designated for Black occupation in terms of apartheid legislation.

TK – Traditional Knowledge

TIMSS— Trends in Mathematics and Science Studies

UNESCO— United Nations Educational, Scientific and Cultural Organisation

UNCSD— United Nations Commission on Sustainable Development

WCED— World Commission on Environment and Development

WEF— World Educational Forum

WIPO— World Intellectual Property Organisation

WKS—Western Knowledge Systems – refers to the content and context of knowledge systems driven by the values and cultures of Western civilisations.

WWC— Western Worldview Curriculum

IWC— Indigenous Worldview Curriculum

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CHAPTER 1

AN OVERVIEW OF THE STUDY

1. INTRODUCTION

The history of the IPs of the world throughout the 18th century is one that entails the imposition of colonial power, with IPs being virtually unable to resist the power of the colonisers. For example, the Afrikaners in South Africa implemented a policy of apartheid with special segregational practices and policies in respect of the blacks. These practices and policies were based on oppression, injustice and racism. Similar conditions existed in Canada, Australia, Aotearoa New Zealand and Latin America (especially Bolivia) with exclusionary policies being applied by the elites. This was highlighted by Poster Grey (2007, p. 34) and, as posited by Four Arrows (2006) in *Unlearning the language of conquest*, also in America with the “anti-Indianism” which lasted over 100 years. It is, thus, clear that South Africa was not the only country where the IPs were segregated legally, geographically and economically on purely racist grounds. However, republican liberalism also produced an informal system of apartheid elsewhere.

1.1 Personal reflections

With my historical background as an IP in South Africa, I am qualified to speak from “my heart” about the segregationist practices and policies as highlighted above. I will, draw attention to the practices in education under apartheid in South Africa.

My first-hand experience of racial segregation, which I experienced from my early school days, inform my personal reflections. I attended school at a time when schooling for African pupils’ beginner years, referred to as Sub A, started at 08:00 and ended at 11:00, whereupon the classes for Standards 1 to 2 pupils would start. This provides a clear indication of how little time education for blacks was worth compared to white learners in Grades 1 to 2 and Grades 3 to 4, who attended school from 8:00 to 13:00.

It is a reality that growing up in South Africa under the apartheid dispensation meant knowing full well that the education system designed for Africans of indigenous origin was not accorded the same recognition as that of white learners. This type of scenario prompted in me a questioning frame of mind during the cognitive developmental stages of life. The questions that constantly confronted me included questions about why the knowledge that was helping our parents and grandparents to survive on a day-to-day basis with little or no resources during the difficult times of apartheid was not mentioned or valued at school, or even represented in school textbooks. It was only the knowledge of the *bathobasweu* (white people) that was regarded as valuable,

knowledge that our teachers and, sometimes, even some of our parents, made us believe would help us to “climb the social ladder”. I wrestled throughout my schooling and my higher learning with this “internal conflict”. It is important to mention that my identification as an African of indigenous origin should be understood against the background of the African Commission’s Working Group of Experts on Indigenous Populations/Communities, whose emphasis is on self-identification and groups that are in a structurally subordinate position to the dominating groups and the state, as was the case in South Africa. Moreover, despite the change in dispensation in 1994, Africans of indigenous origin in South Africa classified as blacks, including the various San and Khoe groups, still remain in a subordinate position, discriminated against and marginalised.

The debates on an understanding of who is indigenous in South Africa continue to be a site of struggle. Much of the literature continues to consider both the Khoi and San peoples, as well as other African communities, including the Nguni, Basotho-Tswana (of which I am part), baVenda and baTsonga to be indigenous. However, in this study the term “IPs” (IPs) will refer to all blacks of African origin who were marginalised by the colonial powers in South Africa before 1994. The debate about the San and Khoi as being the “only” acclaimed IPs falls way beyond the scope of this study and may be subject to further research in a particular space and time.

I believe that my personal reflections come from my vantage point of my educational background and professional training. My first degree was in Education, specialising in History and an indigenous language (Setswana) with History and Education as majors. My honours majors were History of Education and Political Economy. Subsequent to 1994, these courses were subject to contestation issues. My unpublished master’s degree special research project was on the “Relevance of oral tradition and testimony in the History curriculum”. The data from this project culminated in a chapter, “Ziphora Moichela investigates Schweizer-Reneke”, which I contributed to a book for teachers and student teachers titled, *Teachers transform history: Doing history – The teacher as researcher*, edited by Krige, Friedman, Akojee, Devine, Moichela and Greybe (1997, pp. 1–72).

The insights from this research convinced me that Africans of indigenous origin in this case also have a history that must be recognised and acknowledged in both the curricula and the school textbooks. Such recognition and acknowledgement of IPs can have a reconciliatory impact if it is integrated into the curriculum as a way of rethinking the thinking behind the knowledge of indigenous people. This was my hope when I embarked on this study, which would suggest a model of an indigenous knowledge system (IKS) integrated curriculum for basic education in South Africa.

This wealth of knowledge I gained from my postgraduate degree at the Honours level motivated me to propose a master’s degree study on the “Relevance of oral tradition and testimony in the

History curriculum". I was of the view that the selected topic could be regarded as a point of reference for indigenous knowledge (IK) content that could assist teachers in rewriting a history curriculum that would also be representative of the contribution of indigenous people's knowledge to the history of South Africa. I submitted this study in partial fulfilment of my master's degree's research project in 2002.

I have previously referred to the internal conflict that I have always experienced about issues of IK. This conflict may be regarded as "cognitive woundedness ". The turning point with regard to this cognitive woundedness occurred as a result of the South Africa Chair in Development in Education's (SARChI-DE) deepening of their diagnosis, and its responses to issues that had not been previously articulated systematically, such as IKS and transformation by enlargement (TbE). These issues relate to understanding the place of IKS in all disciplinary and policy sectors that play a role in transforming the curriculum by humanising it in an inclusive way. This was a "wow" moment for me. From that moment on I was convinced that this Chair would play an essential role in my thinking by informing me on issues of development in education which, arguably, go beyond the so-called "postcolonial" studies and theorisations to new transformative interventions in knowledge production.

I became increasingly convinced that knowledge could be produced and disseminated through multiple sources. I looked forward to SARChI-DE as a hub for advancing my postgraduate research courses in issues of second-level indigenisation (SLI), a concept that, according to Odora Hoppers (2012) at the DST/NRF SARChI-DE Strategic Retreat, questions the existing rules of knowledge production and engages alternative or complementary plots in the building of knowledge. First, my experience as a teacher from 1978, from lower primary education to high school in 1998. In addition, my moving from high school teaching to lecturing in education, visiting teacher trainees in schools, led me to the assumption that IKSs, although mentioned in the policies for education in South Africa after 1994, had not yet been declared mandatory, in particular in the curriculum for basic education.

This problem influenced my choice of a topic that relates to transformation in the basic education curriculum in South Africa by means of the integration of IKSs into the curriculum for basic education. There was, however, more to this reflection and it will emerge in the pages that follow.

1.2 BACKGROUND TO THE CURRENT STUDY

The Department of Science and Technology (DST-South Africa), as an institutional base for the political legitimacy of alternative knowledge, formalised the design of the National Indigenous Knowledge (NIKS) policy that was adopted by the Cabinet of South Africa (NRF: Indigenous Knowledge Systems) Knowledge Fields Development (KFD) Framework Document (Mkize

&Ndimande-Hlongwa, 2014). In his speech in 2004, the Deputy Minister of DST, Mr Derek Hanekom, confirmed as a fact that indigenous knowledge had always been and continued to be the primary factor in the survival and welfare of the majority of South Africans. The introduction and publication of the IKS policy in 2004 may be regarded as an important milestone in terms of engaging IKSs in the drive to educate and eradicate poverty post the apartheid era. During the apartheid era, IKSs in South Africa were marginalised, suppressed and subjected to ridicule.

This had a profoundly negative effect on the development of both the South African economy and South African society, resulting in the distortion of the social, cultural and economic development of the majority of the people. In terms of every measurement of socio-economic status and wellbeing, and across all age groups and geographical circumstances and both genders, indigenous people have been severely disadvantaged. Integrating and celebrating African perspectives in the context of South Africa's knowledge systems is not only a matter of redressing the imbalances of the past in the education system, but also a celebration that may help to create new research paradigms and mental maps, as well as enrich existing ones.

This was echoed by Khuphe (2014), in his highlights in "Social justice and the Inclusivity of IKS in the Science curriculum" Juxtaposed against the backdrop of centuries of oppression, the indisputable wealth of indigenous knowledge (IK) has survived and, in some cases, has even grown within the protective confines of African thinking on issues such as art, music, religion, theology, governance, justice, health, agriculture and education. Despite the hostile socio-political and environmental characteristics of colonialism in general and apartheid in particular, personal and cultural identities, including social belief systems, have remained strong and vibrant through the repeated observance of IK tenets.

The issue of knowledge in development plays a critical role in ensuring that countries in general and South Africa in particular manage inherent regional and continental problems such as bio-piracy, benefit sharing and the misappropriated recognition of IKS (Seleti, 2007). In addition, IK had been regarded with disdain from the colonial times until the present. This low regard for IK raises serious questions such as: How could IKS be elevated to a level equal with that of other knowledge systems, such as the Western knowledge systems? What has been the experience of IK in other countries, which had significant indigenous population before the colonial times? And, what can South Africa, as a young, democratic nation, learn from the experiences of other countries about the positive practices for transformation of the education through indigenous knowledge in the curriculum? These questions will never be addressed by glossing over the general understanding of education of individuals and societies. It is suggested that education as a concept has to be unpacked in the context of its "development" of marginalised communities. Education is important to the life of every nation, both for the young and the old.

Generally, “education is viewed as a means of social upliftment” (UNESCO, 2007). Education plays a key role in the development of both the individual and society (UNECE, 2011). This statement may be related to the African conception of education as a means that should enable an individual to function in a modern society. This perception of education in Africa is articulated by Odora Hoppers (1998a, pp. 23–24; 2008, p. 24) in the following ways:

- Education provides a learner with new skills and knowledge that should enable him/her to function in a modern society.
- Education has a liberating role whereby it is conceived as a tool for illuminating the structures of oppression and equipping learners with the tools to alter those oppressive structures in society.
- Education is the transmission of the normative heritage of a people from one generation to the next. In relation to the points raised above, wa Thiong'o (1981) wrote, “a people's culture is the carrier of values evolved by that community in the course of their economic and political life”. The values they hold are the basis of their outlook, the basis of their collective and individual image of self, their identity as a people who look at themselves and their relationship to their universe in a certain way. This suggests that once these roles have become misguided, as is the case in Africa, the individual dreams about the liberating role of education become “deferred” by means of the imposition of external education agendas.

Emanating from the above, it may be argued that the failure of an envisaged liberating education in Africa is a consequence of the reproduction of structural violence, which results in just “an-other society” which is forever dominated by the violence of other subsystems. In relation to this emphasis on the failed role of education in Africa, Odora Hoppers (1998a) is of the opinion that if learners are taught the normative heritage of only one culture, as cited by wa Thiong'o (1981) earlier on, that the young peoples' thoughts and cognition are shaped to have maximal congruency with the values and practices of Western society. These are imposed on them, thus rendering education, as currently constituted a key carrier of the most harmful, cultural and epistemic violence of science.

According to Hoppers (1998a), this may be seen as an anomaly which, has been routinised and made to appear normal, thereby leading to the formation of discourses that legitimise the said anomaly, while any attempt to create or contemplate another discourse is quickly rendered as an anomaly. The argument above illuminates the concept of the “double agenda” in education, as implied by Ki-Zerbo's (cited in Odora Hoppers, 1998a, p. 24) discussion on education in development with regard to its relationship and link with the other subsystems such as the

economy and Western ideology, in terms of which it has a dialectical relationship of mutual influence with the “other” which is in fact the agenda of the dominating power. This is the site of struggle in relation to education in developing countries and in Africa in particular, where it is not simply for the production of a “new self” but also for the reproduction of the social, economic, political and cultural structures. It is, therefore, self-evident that education for development in Africa is not only an enabler for social upliftment as highlighted in (Garg, D. 2017, but it is reproducing its hidden agenda of structural violence, which does not descend from African society but from “another” society, Western society.

This confirms Odora Hoppers’ (1998a, cited in Stronquist & Monkman, 2014, p. 105) conception of the structural violence of the educational policy at the systemic level in terms of not only reproducing “another” society, but also the violence of the other sub-systems in the conquered societies through its monopoly of/and influence over the mind space of the young (and old). It may be suggested that this argument implies that the way in which both the young and the old in African societies immerse themselves in education in development is a “dream deferred”, or rather a dream with multiple tragedies, as it is a perpetual continuation of the colonial, imperial and capital agenda in “universalistic” terms.

The integration of IKSs into the curriculum for basic education is intended to illuminate issues such as the ones highlighted above. These demonstrate that the “provision” of education in Africa is not an innocent enterprise aimed at uplifting the communities as it is purported to do, but rather a subtle reproduction of the power of supremacist Western societies in Africa (UNESCO, 2006). South Africa as part of Africa, it is not possible to view Africa as an entity that is untouched by the said “multiple tragedies of education” which may appear to be attractive but have violent undertones in the school curriculum. The question then arises: How can South Africa emerge from this morass of the colonial reproductive education system? The alternative policy and practice of the post-apartheid dispensation should be addressing those issues that will transform the existing education into an education that develops humanity and does not short-change it in this regard for “other” societies. Accordingly, the focus of this study was to explore the integration of IKSs into the curriculum to provide transformative alternatives, which will, among other things, hasten the inclusion of the land and languages of the IPs, which are the bedrock of IKS.

It is suggested that the alternative policy and practice of the post-apartheid period begin with an assessment of the implications of the relationship between IKS and policies. This should be geared to transforming the education system in order to address the imbalances that existed in the education system before 1994. One way of transforming education in South Africa is through indigenisation. Hence, this study proposes an exploration of the guidelines for revising the

integration of IKS into the curriculum for basic education. These relate to all schools from Grades R to 12 as well as to adult literacy programmes.

The White Paper on Education and Training, 1995 (DoE, 1995), highlights that the fundamental goal of the national education and training policy is to enable all individuals to value, to have access to and to succeed by means of quality lifelong learning, (LLL), education and training (White Paper on Science and Technology, 1996). The White Paper on Arts and Heritage (1996) views education as a part of culture and acknowledges that culture itself is transmitted through education. In addressing this issue, the National Qualifications Framework (NQF) in South Africa embraces the principle of LLL, and recognises that places where individuals may study and receive a qualification are not limited to schools, colleges and institutions (National Qualifications Framework, NQF2008).

Accreditation by the NQF and related structures can be extended to several diverse forms of learning and should include the validation of knowledge learnt and applied practically in indigenous communities – knowledge which is most frequently transmitted orally. Furthermore, the NQF points out that the said recognition will be by means of the recognition of prior learning (RPL), as developed by the South African Qualifications Authority (SAQA) in 2002 (SAQA, 2013). The RPL policy has been replaced by the National Policy for the Implementation of Recognition of Prior Learning within the context of the National Qualifications Framework Act 67 of 2008. Among others, it is envisaged that this policy will validate RPL and also the purposes of RPL in relation to various contexts and classifications of knowledge, skills, competencies, qualifications and part-qualifications in the national learning system (SAQA National Policy for the Implementation of the RPL, 2013, p. 3d).

In the context of the national arena of the post-apartheid dispensation, policies such as the RPL may be interpreted as acknowledging the fact that knowledge is not one dimensional: it is not only acquired at school but may also be acquired at home and be brought to school; furthermore, this knowledge should be recognised as legitimate. However, the credibility of the RPL implementation in South Africa's education system is yet to be recognised.

The policy most relevant to transformation in the South African education system following the apartheid era is the IKS policy, which was adopted by Cabinet in November 2004. This policy may be regarded as representing the first important milestone in the government's efforts to recognise, affirm, develop, promote and protect IKS in the Southern African Development Community (SADC) region, New Partnership for Africa's Development (NEPAD) projects, and in South Africa in particular (NEPAD Report, 2007). The adoption of the IKS policy in South Africa was applauded by Minister Mosebudi Mangena of the Department of Science and Technology in 2004, who highlighted the following:

The policy also comes at a time when the debates at the agencies of the United Nations such as the World Intellectual Property Organisation (WIPO), Convention on Biodiversity (CBD) and other international forums are coordinating processes and dialogue between developed and developing countries on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore.

The debates focused on the demands of IPs, local communities and governments, mainly in developing countries, for equivalent protection for traditional knowledge. The objective of the developing countries' dialogue was the development of an international legal instrument (or instruments) that would provide traditional knowledge (TK), genetic resources and traditional cultural expressions (folklore) with effective protection in (WIPO 1988–1999, Report on Fact-finding Mission on Intellectual Property [IP] and TK [in] IKS Policy, 2004).

This demand was acceded to in 2009 by the WIPO members (WIPO, 2016; www.wipo.int) and was regarded as a historic shift in international law, enabling indigenous and local communities, as well as governments, to have a say in the use of their TK by others thus implying that the traditional remedies and theatre and music of IPs could be protected from misappropriation, thereby enabling communities to control and benefit collectively from the commercial exploitation of such remedies, art and music. However, what are the implications of this shift for IKS and education for integration in South Africa?

1.2.1 IKS integration into the curriculum and education system in South Africa

As mentioned earlier, the White Paper on Education and Training (1995) and the White Paper on Science and Technology (1996) prepared the way for a type of education system that would be relevant to the lives of the people. This crucial need for an education that “relates to peoples’ needs and aspirations is entrenched in the Constitutional principles of democracy, social justice, equality, non-racism, non-sexism, human rights and human dignity and which, in reality, should have been the premise of the post-apartheid national education system” (White Paper on Science and Technology, 1996). However, this has not been the case in the educational landscape in South Africa. The view of education as part of culture and development presented in the White Paper on Arts, Culture, and Heritage (1996) acknowledges that “culture transmitted through education can be said to place the DST in a favourable position of being a relevant institution to drive the process of development in education”.

The argument arising from the earlier discussion on the NQF and the recognition of RPL embraces the principle of LLL and emphasises the fact that knowledge is not only acquired in schools, colleges and institutions. Knowledge from indigenous communities (orally transmitted)

must also be validated, thus enabling accredited qualifications to be issued. However, this issue has not yet resulted in a test case in South Africa under the democratic dispensation.

The above argument based on the IKS policy (2004, p. 17) highlights the need to phase IK in the curricula and for relevant accreditation frameworks in order to validate IKS. However, this expectation has been found to lack background in relation to how such an integration can be carried out; hence the importance of this study in addressing the issue of the lack of transformation in the South African education landscape.

1.2.2 Indigenous knowledge as a human rights issue

Human rights are entrenched in international law through their inclusion in a wide range of international instruments to which South Africa is a signatory, for example the Universal Declaration of Human Rights (1948), the International Convention on Social Economic and Cultural Rights (1998) and the Convention on the Rights of the Child (1998). The key purpose in guaranteeing these rights in terms of international law is to secure the full development of the human personality and to promote respect for human rights (Chisholm, Motala, & Vally, 2003). In respect of education, Article 26 deals with the provision of free education “at least in the elementary and fundamental stages” of basic education.

The upholding of the rights of the child in South Africa, in particular, has been echoed by renowned educators in the field of knowledge development such as Odora Hoppers, as was evident in a speech given on the occasion of her acceptance of an honorary doctorate from Nelson Mandela University in 18 April 2012,² when she referred to, among other things, the teaching of children as being “a task of pain” in trying to save them from the physical pain of decreased self-awareness. It may, thus, be suggested that:

One path of saving our children from the path of craziness about this will be for training to expand on the knowledge that individuals have. Furthermore, it will be by accordingly intruding the deficiency of self-perception over a number of learners from non-western roots as far as the learning they have. The alternative training frameworks should be geared towards economic development that regards social diversity and advertises

² “Love Is a Task” is a poem that formed part of the acknowledgement of the honorary doctorate conferred on Prof Catherine A. Odora Hoppers by Nelson Mandela Metropolitan University on 18 April 2012.

cognitive equity without losing sight of the worldwide needs from claiming advance of what's more co-existence. (Odora Hoppers 2012)

Earlier on in this chapter, I posed a question regarding what South Africa should do to escape from the educational morass of not upholding the human rights of the child by continuing to marginalise the education that the indigenous learners bring from home. The reference made by Odora Hoppers to the “Love is a task” phrase speaks to the very core of agents of change, namely, teachers who are expected to nurture the knowledge that the learners bring from home, with their love and servitude being of prime importance in this task. It is therefore important to mention that the integration of IKS into the curriculum should be regarded as a “daunting task” for teachers, especially at the basic education level where the utmost care should be exercised, as it is here that the foundation of critical learning is laid.

Education is a basic human right, which needs to be upheld. Basic education is an international obligation which will help ensure the right of every child globally not to be left behind in terms of other socio-economic and political rights and civil liberties. The latter argument regarding the centrality of education as a basic human right, is an indication of the critical role that basic education is supposed to play in protecting individual human rights and promoting democracy and social justice as incontrovertible issues in the education system of every democratic country.

The struggle for social justice and transformation and the right to education was at the centre of the basic demands stated in the education clause (No 8) on culture and learning in the Freedom Charter (1955) (Federation of South African Women, 1954–1963). The edict “the doors of learning and culture shall be open to all”, as stated in the Freedom Charter, became the basis for the much anticipated transformation of the education system which was intended to end the old apartheid system of education. Unfortunately, however, the education system implemented in the country after 1994 was an outcome of the pre-1994 negotiations held by the Government of National Unity (GNU), which was a coalition that emphasised reconciliation as opposed to an outright strategy for the transformation of the education system. These negotiations resulted to a precarious situation for a government vested in compromise and prevented it from forging ahead in tackling issues of indigenous education that should have been given priority as far as social justice was concerned. The “short-changes” in transforming the education system were highlighted in the following policies: The National Education Policy Investigation document (1992) and the ANC’s 1994/1995 Education and Training Framework and Implementation Plan. The compromise in respect of the total transformation of the education system in South Africa left a void, which was still felt 23 years after democracy by “millennial” students (the younger generation with high connectivity to the internet). The millennials expressed their anger towards the education system, which fails to recognise learners’ local knowledge. The millennials’ frustration and anger, displayed in the 2015–2016 student protests in the movements like #RhodesMustFall# and

#FeesMustfall, may be conceived as being representative of deeper concerns relating to South African students' feelings of frustration against colonial education (i.e. the Nationalist government's initial engineering of the apartheid education system in South Africa from 1948 to 1994, and the continued adoption of a colonial archetype curriculum even after the 1994 democratic dispensation).

Furthermore, it may be said that these demonstrations against so-called colonial education by the South African youth was a warning sign to the African National Congress (ANC) government to "abdicate the throne" of the totalitarian discourse on "possessive market individualism", (It is one of Macpherson's (1962)'s work in Kennedy, G. (2012), on the conceptualisation of a "possessive market society'. Herein Mcpherson characterised England as a possessive market society characterised by a number of factors, among others: all producers are tied to land; labour – and the rewards stemming from labour- is authoritatively allocated on the basis of status; and absolute and unconditional rights to private property are absent from the economy, preventing the development of a market in land. (Keet, 2002). To date, this has been perceived as a "one-way solution to world problems". The allusion to market individualism, which is said to be based on the "market driven economy" on which the world is dependent, is not the "alpha and omega" of the solution to world problems and it may in fact explain why the world's problems are continuing to escalate, despite the technological advancement of the 21st century.

This is another disadvantage for the language of rights, which may also be seen as disguising reality by presenting values in an a-political, a-social and a-historical manner, articulating abstract ground rules that govern the relations of individuals to the state, and avoiding concepts that take suffering seriously. Taking suffering seriously also means taking active steps to disclose the discrepancy between the existing normative framework of society and its reality. In addition, it may imply that protecting human rights takes into account the most pervasive and chronic forms of distress that are a consequence of economic, social and political structural circumstances that impact on both groups and individuals. This statement outweighs the concept of individualism in the market-driven policies on the basis of collective human rights which, in Odora Hoppers' (2004, 2007) view, challenges the philosophical foundations of the dominant human rights discourse which perceives people as individuals rather than as social beings. Such social beings are the product of a web of relations – social, economic and political – from which social relations arise. It is from this vantage point that the fate of millions of people who are trapped in a permanent state of poverty at the margins of economies should be exposed – collective versus human.

The question then arises as to how collective human rights may be utilised as instruments of justice in the knowledge arena, which is still dominated by the Western paradigm. I hope to argue in this study that IKS is a process of knowing that may be greatly enhanced by its integration into

the curriculum for basic education as a basis for laying a foundation for knowledge that is sustainable. The integration of IKS into the basic education curriculum is a constructive complement of LLL and it is also for the common good. Odora-Hoppers (2001, p. 14) aptly points out that when these knowledge systems, for example IKS, are combined, they complement each other and they may achieve what they could not achieve alone. It may therefore be suggested that it is important that, in the process of attempting to transform the education system, absolute care should be taken to ensure the upholding of human rights by not refuting any knowledge system that has been marginalised like IK in the case of South Africa. Worldwide, any democratic state that attests to reconciling the previous marginalisation of IP has the responsibility to recognise and acknowledge IPs' knowledge. Accordingly, cognitive action would be a viable concept to apply to restore the imbalances of the past in relation to knowledge systems.

1.3 RATIONALE AND SIGNIFICANCE OF THE STUDY

The current debates in knowledge circles, both internationally and nationally, are drawing attention to the recognition of divergent knowledge systems that may sustain life and not be fixated on the notion that Western knowledge is the only valid knowledge system able to solve the world's recurring problems. This highlights the relevance of the research topic of this study in relation to the United Nations Decade of Education for Sustainable Development (ESD), internationally and nationally, in terms of the United Nations research agenda for the 21st century, as highlighted in UNESCO 2005–2014 (2005, p. 17). This also relates to the reorientation of the vision of education towards sustainable development by 2023. The mission of Agenda 21(36.3) in respect of education is to drive the sustainable development project for the whole world by epitomising the crucial role of basic education as the basis for providing the environmental and development education that is an important component of learning. Sustainable development is key to humanity's survival in the 21st century.

It would therefore be worthwhile to tap into the sustainable knowledges, in this case, indigenous knowledge systems, that have sustained humanity for 50 000 years. IKSs have emerged as one of those knowledges and, hence, IKSs have become a focal point for achieving the sustainability that is such an urgent issue the world over. The recognition of IKS as an epistemology of hope in relation to sustaining humanity in the 21st century cannot be recognised outside its sources, which are the physical/biological, socio-economic environment and the human spirit, both of which should be integrated into all disciplines by means of both formal and non-formal methods of knowledge construction. This notion brings the concept of transdisciplinarity to the fore in relation to bringing different disciplines together, while not downplaying the authenticity of any of the disciplines.

1.4 PROBLEM STATEMENT

South Africa is on record for the “beautiful” policies on transformation formulated in the country after its independence in 1994. However, it would appear that the active implementation of these policies is lacking, especially the lack of a declaration on the mandatory integration of IKSs in the curriculum for basic education. This is also highlighted in some studies in this area, for example in Khupe (2014, p. 201). Nevertheless, the review of the IKS policy in South Africa (2014) shows that there have been numerous successes in terms of student training through grant-linked bursary schemes, which have seen deliverables that are engaging with the works of Ogonniyi (2008, p. 4) and Meyiwa (2013). These works indicate that the main “drivers” of the active practice of IKS in the classroom curricula are teachers. This would suggest that it is crucial that teachers are trained to understand the definition of IK and how to teach this knowledge in an IKS–Science curriculum. However, among other findings, the review also established that;

- in the area of knowledge production, the policy and its proponents do not provide an appropriate level of application
- there is a lack of a common understanding or definition of IKS
- new research findings from the IKS programme are not being translated into classroom curricula at school level (Review of the National Research Foundation managed Indigenous Knowledge Systems Programme, 2014).

The findings highlighted above clearly demonstrate that a deficiency in the practical application of IKS in the curricula has created a gap, namely, a gap in the manner in which IK is integrated into the curriculum for basic education in South Africa. This gap relates to the superficial way in which IK has been integrated into the education system, with the packaging of the curriculum continuing to be skewed in terms of the worldview that represents valid knowledge. The ongoing reviews of the curriculum, from the C2005, to the National Curriculum Statement (NCS) to the Curriculum Policy Statement (CAPS), have continued to downplay the African worldview.

This has created a void that has led to the integration of IKS into the curriculum for basic education being non-functional and inauthentic and, thus, leading to an education system in South Africa that is lagging behind in transformation. This transformation is aimed at redressing the imbalances of the past by representing the worldview of IPs and ensuring that the curriculum meets UNESCO’s call for Education for Sustainable Development (ESD) for Humanity, as voiced at the UNESCO World Conference on Science (1999, item 6). It was at this forum that the stakeholders committed themselves to the advancement of knowledge that would be of service to humanity as a whole by ensuring a better quality of life for both current and future generations.

The background above explains the reason for the title of this study, namely, “The Integration of IKS into the Curriculum for Basic Education in South Africa: Shared experiences of Canada and elsewhere”. The call by UNESCO (1997) in respect of the development of education for humanity suggests that any development in education in the 21st century should strive to reflect human rights. Any failure to adopt the issue of human rights as a lens for knowledge advancement would be equivalent to a violation of human rights, as outlined by the UNESCO World Conference’s commitment to validate IKS not for the sake of knowledge but for the sake of human sustainability. This international commitment also places the issue of recognising IKS in the education system in South Africa under scrutiny. In determining whether the advancement of knowledge, in this case IKS, is for superficial ends then, the new emerging concept in development education could be the key to preventing the education system in South Africa from lagging behind in respect of its recovery from being an assimilation education system. Hence, this background will form the basis of the discussion in relation to the aim of the study.

1.5 AIMS AND OBJECTIVES

1.5.1 Aim of the study

The aim of this study is to explore ways in which to transform the curriculum for basic education in South Africa by changing the knowledge production paradigm through emerging concepts of development education that can show the way to recovery from experiences of assimilation education systems in South Africa, with reference to experiences in Canada in particular and elsewhere.

Sub-aims

- To analyse the nature of the experiences of assimilation education in South Africa and Canada in relation to the transformation of the curriculum by integrating IKS into the curriculum.
- To identify particular experiences in the Canadian context that may be relevant lessons for South Africa regarding the integration of IKS into the curriculum.
- To make recommendations for transforming the curriculum for basic education based on the suggested model of a curriculum that relates to the African worldview.

1.5.2 Main research question

What are the experiences of South Africa with regard to the integration of IKS into the curriculum?

Sub questions

- What are the challenges experienced by South Africa with regard to the integration of IKS into the curriculum for basic education?
- How did Canada reach the point they have come to today with regard to their experiences pertaining to the integration of IKS into the curriculum?
- How can the new emerging concepts in development education in South Africa be adopted as guidelines for a recovery from an assimilation education system to a transformed education system in South Africa?
- How can the findings on the possible relevant experiences of Canada regarding the integration of IKS into the curriculum be shared with South Africa?

1.5. 3 Objectives

- To explore the experiences of South Africa with regard to the integration of IKS into the curriculum.
- To explore the challenges experienced by South Africa with regard to the integration of IKS into the curriculum for basic education.
- To discuss how Canada reached the point they have come to today with regard to their experiences pertaining to the integration of IKS into the curriculum.
- To show how the new emerging concepts in development education in South Africa should be adopted as guidelines for recovering from an assimilation education system to becoming a transformed education system.
- To highlight the possible relevant experiences that can be shared with South Africa, from the findings relating to Canada's experiences regarding the integration of IKS into the curriculum.

1.5.4 Research paradigm

This study was viewed through the lens of Afrikology as the “heart” of all knowledges and their connection to both the knowers and their worldviews. This is done holistically in a way that encompasses their thinking and integrates multiple layers of meaning and experience instead providing a limited definition of their possibilities as human beings. Thus, for the purposes of this

study, Afrikology is placed at the centre of philosophies that can prevent the distortion of the African worldviews and, thus, foster their being rethought and reconnected to their cosmology.

Afrikology in this case may be reimagined in relation to Creswell's (2009, p. 6; 2014) view of assigning a paradigm or lens to a belief that guides action to different meanings. In addition, Nabudere's view of Afrikology as a humanistic theory may be a point of reference in finding meaning in the interests of an epistemology that may save the world from its present chaotic knowledge systems. Nabudere (2011, p. 2) asserts that "the objective of this exercise is to elaborate how Afrikology, as an all-inclusive epistemology based on the cosmologies emanating from the Cradle of Humankind, can play a role in rejuvenating the universal knowledge, which our ancestors first put in place in their growing spread around the world". I, therefore, viewed my role as an indigenous (African) scholar as representing an attempt to retrace this humanistic philosophy of Afrikology, which has its roots in the continent, to bridge the gap that exists in knowledge systems that has resulted in perpetual clashes between paradigms the world over. This clash of paradigms became the root cause of the so-called curative measures colonisers applied to IPs in the form of extermination, termination and assimilation.

1.6 RESEARCH METHODOLOGY

1.6.1 RESEARCH METHODS

The focus of this study is the experiences of human beings, that is, indigenous communities. As it was not possible to quantify this, it was decided that a qualitative methodology would be the most appropriate. The study used desk research as the research design, which enabled me to learn about the experiences of other IPs by "visiting" other countries while in my office and using my laptop computer.

Accordingly, the study made use of a qualitative research methodology, focusing essentially on understanding people and the social and cultural contexts within which they live and thrive. This type of inquiry is flexible in accommodating other types of research approaches that have recently emerged from the discourses of academic research. These include examples such as cultural discourse, which deviate from the one-way knowledge exported from the global centres and standardisation, and their dominant market-driven ideologies (Shi-Xu, 2009, 2015, p. 2). The researcher's assumptions led to the epistemology, which entailed indigenous knowledge and how it may be integrated into the curriculum for basic education in South Africa.

1.6. 2 Research approach

The qualitative research approach on which this study was based refers, according to Strauss and Corbin (1987, cited in Brink, 1993; 1990, pp. 303–304), Chenitz and Swanson (1986),

Crabtree and Miller (1992), Field and Morse (1985), LeCompte and Goetz (1992), Morse (1991) and Sandelowski (1986, cited in Brink, 1993), to any type of research that produces findings which were not arrived at by either statistical procedures or other means of quantification. Qualitative research can refer to research about peoples' lives, lived experiences, behaviours, emotions and feelings, as well as research on organisational functioning, social movements, cultural phenomena and interactions between nations. Accordingly, qualitative research accorded well with the subject of inquiry of this study, as the study focused on the experiences of international indigenous communities with regard to their knowledge systems and cultural phenomena, how they make meaning of their IKS to transform their education systems to serve their communities and the lessons that South Africa can learn from their experiences. It is for these reasons that qualitative methodology was deemed to be a viable methodology for this study because qualitative research is, by its nature, flexible on the basis that its findings can be arrived at without any statistical procedures as may be deduced from the definition of Strauss and Corbin (1990) that:

Qualitative research, broadly defined, means “any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification” (Strauss and Corbin, 1990, p. 17).

Qualitative research makes room for so-called “non-conventional” methods, such as indigenous methods to be used in the investigative process of knowledge production. The flexibility of the qualitative approach, as alluded to by Gibbs (2007), means that it can be used to not only reveal the range of subject matter about which people are talking but that it also recognises and analyses the ways in which they frame and mould their communications. This assertion is comprehensively echoed by Holloway and Todres (2003, p. 2) in their argument for flexibility in the research approach as follows:

- To respect, as far as possible, the primacy of the topic or phenomenon to be studied and the range of possible research questions by finding a methodological approach and strategy that can serve such an inquiry. This means not becoming too attached to method for method's sake – a type of reductionism, termed “methodolatory” by Janesick (2000) and used in explaining an obsession with method as opposed to content and substance.
- To acknowledge that a number of qualitative research strategies and skills are generic, including interviewing, thematising meanings, and the type of writing that finds a balance between narrative and illustrative.

The argument above highlights the fact that qualitative research, unlike quantitative research, does not operate within the confines of a rigid set of procedures or as a method for “method’s sake” (as highlighted in the views of Holloway & Todres, 2003 quoted above). Qualitative research is able to make room for other approaches such as, for example, the decolonisation of research as suggested by Smith (1999, p. 1), Wilson (2001, pp. 214–217), Macmillan and Schumacher (2001, p. 12) and the Centre for Native Health Partnerships (2012).

According to Mason (2002, p. 1, cited in Lynch, 2014, p. 4), qualitative research is a highly rewarding activity because it engages us with things that matter, in ways that matter. Through qualitative research, we can explore a wide array of dimensions of the social world, including the texture and weave of everyday life, the understandings, experiences and imaginings of our research participants, the ways that social processes, institutions, discourses or relationships work, and the significance of the meanings they generate. This study aligns well with Mason’s analysis of the quality of qualitative research as chosen for this study, because it is a study about “life and death” issues that concern the “power” relations that determine whose knowledge is more powerful than others and explores the experiences of IPs in their attempts to transform their education systems for the human good. With a qualitative methodology, one can apply methods that celebrate the richness, depth, context and multidimensionality as detected in IKS. The generic nature of a number of qualitative research strategies justifies its flexibility in accommodating other research approaches that fall outside of/in between traditional boundaries.

1.6. 3. Research design

The research design comes into play at the stage when the researcher has moved from the research topic to the overall research question and has formed some idea of the general shape and plan or blueprint of the actual study.

The research design emphasises the collection of data on naturally occurring phenomena. The majority of the data gathered is in the form of words, which the researcher will search and explore using a variety of methods until he/she reaches a deep understanding of the data that has been collected. This study explores the phenomena under investigation by means of the following methods: in-depth desk research, the case study and meta-analysis. These methods were selected from the organised disciplines and fields of knowledge that are grounded in the Western “ways of knowing” that may be inherently culturally insensitive. I attempted to use these disciplines and fields of knowledge in a way that they do not simply interpret indigenous knowledge from the perspective of a Western framework which, in Smith’s (1993, p. 3) view, may effectively distort reality. The qualitative research design was pivotal in raising an awareness of various new concepts/emerging concepts as they were introduced in the course of this study. These new concepts were organised in terms of individual lived experience, as seen in phenomenology, case

study, grounded theory and the meta-analysis of certain critical studies with a focus on society and culture, as defined by ethnography and certain critical studies and as delineated in McMillan and Schumacher (2011).

1.6.4. Sampling

Sampling is a process that is used to select a portion of a population for the research to be conducted (Merriam, 2009, 2014; Stake, 1995, 2005, 2006; Yin, 2009, 2011, 2014, p. 42). The following countries, Canada, New Zealand and Australia, were selected for the purposes of the study, the focus of which was the integration of IKS into the curriculum.

The population for the study comprised two countries, namely, Canada and South Africa, with Australia, New Zealand and Bolivia as additional points of reference in terms of their relative experiences of assimilation education. These countries also went through assimilation in their education systems, as did South Africa, with their knowledge systems being almost obliterated, (Franklen, G.B. 2017). Their unrelenting struggles in relation to the transformation of their education systems by means of striving for the recognition of their knowledge systems were tapped into as alternative ways of thinking without which the world would otherwise continue on its collision course.

No fieldwork was conducted and, thus, the data collected via desk research had to be pre-meta-analysed to determine its relevance to the purpose of the study, namely, to explore the challenges faced in the integration of IKS into the curriculum and to identify new concepts that could transform the education system in South Africa so as to ensure that indigenous learners achieve the same global competitive edge as learners elsewhere in the world. Thus, a deep type of desk research was required and, hence, the frame of in-depth desk research for extending existing research under study. This has been suggested by Reeves and Hedberg (2003, p. 32), Husserl (1960, cited in Cajete, 2000, p. 45) and Dei, Hall, and Rosenberg (2002, p. xii).

1.6.5. Data collecting methods

The data collection process is an important aspect of any type of research study. The collection of inaccurate data may impact on the results of a study and, ultimately, lead to invalid results.

The data collection methods will vary along a continuum for impact evaluation with the way that the data are collected for its use. This means, that the way that the data are collected matters for the use of those data. The varying of data collection methods in this study is because of the nature of this study as, desk research whereby different completed studies are analysed using qualitative methods (www.worldbank.org/poverty/impact/methods/datacoll.html).

1.6.6. Qualitative data collection methods

Qualitative data collection methods may be tiring for the researcher because, in view of their following attributes, they are very time-consuming:

- They tend to be open-ended and with fewer structured protocols as compared to quantitative methods (i.e., researchers may change the data collection strategy by adding, refining, or eliminating techniques or informants).
- They rely more heavily on interactive interviews and the respondents may have to be interviewed several times to allow the researcher to follow up on a particular issue, clarify concepts or check the reliability of the data.
- Triangulation is used to increase the credibility of the findings (i.e., researchers rely on multiple data collection methods to check the authenticity of their results).
- Generally, the findings are not generalisable to any specific population and, instead, each case study produces a single piece of evidence that may be used to seek general patterns among other studies on the research topic (www.worldbank.org/poverty/impact/methods/qualitative).

The attribute that relates to this study is the last-mentioned one, as the researcher did not carry out any fieldwork by conducting interviews with informants as is generally the approach adopted in research conducted with IPs. This explains why the researcher had to use the data collection methods discussed in the following sections.

1.6.7. In-depth desk research (IDR)

Desk research is embarked on in cases where the researcher does not have the resources to be physically at the sites of data collection. However, the use IDR can be a very tedious process; as a researcher you need to be decisive in terms of the selection of the data you amass to your desktop. When approaching IDR, the researcher should be aware that their role is to review previous research findings in order to gain a broad understanding of the field. IDR can assist the researcher in searching for relevant information, thereby minimising the risk of omitting any core publications. This issue has been elaborated by Sicińska et al. (2018, p. 83), who suggest ways of utilising desk research in seeking information and publications on official websites, with particular reference to the main scientific societies and, in this case, organisations concerned with IKS.

The researcher “visited” the three selected countries, namely, Canada, Australia and New Zealand, by means of the IDR method, which led to the assessment of documents such as policies, reports, speeches, secondary sources and oral texts with a view to analysing them in the light of the research topic. In the case of this study, the integration of IKS into the curriculum for basic education.

1.6.8. Case study (CS)

In this study, case studies were used to analyse cases such as Canada that provide information on the way in which countries have tried to integrate IKS into their curricula. Other case studies were also accessed in order to peruse their findings on the active integration of IKS into the curriculum and to ascertain how those findings could be juxtaposed with selected South African case studies, in order to uncover lessons that could be shared in respect of the transformation of basic education in South Africa.

Miles and Huberman (1994, p. 25), Merriam (1998), Geertz (1973), Stake (1995, p. 2), (Stake, 2000) and Yin (2003, in Njie, & Asmiran, 2014, p. 36), capture the essence of as “a phenomenon that is occurring in a bounded context”. For the purposes of this study, the case study method involved analysing the cases which had been selected by conducting a review of relevant documents (Bowen, 2009, pp. 32–34). Merriam (2009) maintains that the purpose of a case study is to produce, understand and further develop the concepts under study, which may be presented descriptively or as narrative. The cases under study have been analysed according to the findings, which could be either qualitative or quantitative, to determine whether it was possible to reach a common conclusion concerning the nature of the study and, if so, how these findings could be used as a point of reference for future research on the development of the subject of IKS and the curriculum.

1.6.9. Meta-analysis (MA)

Generally stated, meta-analysis (MA) is a methodology that is used to accumulate findings across quantitative and qualitative studies that estimate the degree of actual variation between the studies. According to Hunter, Schmidt, and Jackson (1982), meta-analysis is a methodology that is employed to synthesise the outcomes of various studies related to the same topic. As pointed out by Anguinis, Dalton, Bosco, Pierce, and Dalton (2011, p. 7), meta-analysis emerged in the academic domain in the 1980s. This methodology took the research field by storm and researchers were faced with huge challenges arising from the implications of the meta-analytical results and the subsequent implications for both theory and applications.

The methods used in this study enhanced collaboration in the research so that it became an “integrated IKS community research engagement” (IIKCRE) as suggested by Nabudere’ (2010, November) in his personal address at the SARChI’s retreat, when he cited Nicolescue by pointing out that “these kinds of methods should be immersed in IKS so as to relate to the indigenous people and their knowledge and their local culture”. This gave me the impetus to apply meta-analysis in this study along the pre-meta-analysis, which is discussed in the next section.

1.6.9.1 Pre-meta-analysis (PMA)

The concept of IIKCRE, as alluded to above, can be understood as a practical example of pre-meta-analysis. This concept is illustrated in the diagram below, which demonstrates how this study was a collaborative text from its inception, which was marked by the discourse with the elders in particular, acting as overseers and critical readers who evaluated the concepts and methods which were presented to them, as well as to experts in the field of IKS.

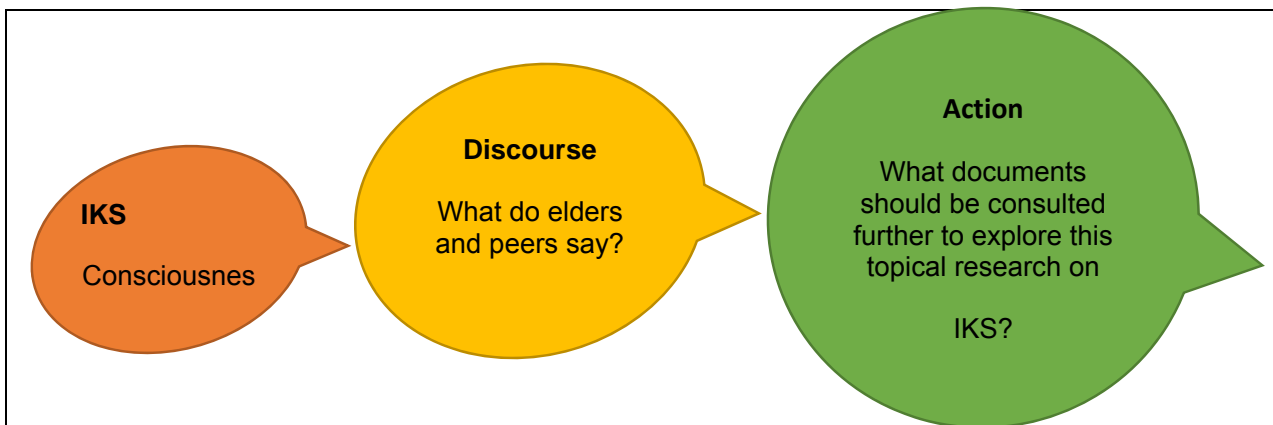


Figure 1: Integrated indigenous knowledge systems community research engagement

The issue raised by Nabudere (2010) in his address and cited above, has implications for the methods immersed in IKS by means of a transdisciplinary approach that could enable indigenous people to define their own perspective instead of relying solely on Western research concepts of anthropology and history theorists and from which IKSs have emerged as something exotic. This view is endorsed by Mihesuah (1998, p. 1), Kawagley (1995) and Kanaqluk (2001) in their references to the latter methods as “theoretical” and “ready-to-use” methods. I gravitated towards using these methods as a means of shifting the paradigm, borrowing Crazy Bull’s (1979, p. 19) term of the “own tribal mark” on the research. The concept of “own tribal mark” can be linked to

the indigenous research methodology of the Maoris of New Zealand which is referred to as Kaupapa Maori (Smith, 1999, pp. 183–195; Bishop, 1999; Irwin, 1994). As a result of this methodology, the ability of IPs to define research from their own worldviews emerged into the public domain.

This ability of the IPs to define their own perspective was experienced by the researcher at the World Indigenous People's Conference on Education (WIPCE)³ in 2017. The focus on the themes at this conference depicted the said self-definition of the IPs' own perspectives. This conference was a gathering of the Tri-annual Front of the World IPs which elevated themes that emphasise that "the answers are within us, in our languages and cultures, and in the stories of our relationship to place". This spirit of resilience was enhanced at the WIPCE 2017 forum which I attended and where I felt a part of the collective "us".

This study was undertaken at a time when South Africa was faced with the challenge of transforming its education system by having to seriously consider immersing the indigenous research methods in academia's research methods in a way that would heal the country from the violence to which Science has subjected most of the research undertaken in education. It has also regarded the "researched" as the perpetual objects of research and not as "makers" of knowledge as well. It is for these reasons that Afrikology, as engaged with in this study, was transformed into a significant cosmology that could recreate the indigenous epistemology, ontology and axiology that have been lost, thereby opening up possibilities for new perspectives different from those that are familiar and endorsed as being "scientific" in the Western mode of thinking.

This view has been publicised in the academic debate by renowned scholars like Peat (2002, p. 2), in his references to his own experience of the Sun Dance on Turtle Island (Canada). According to Peat (2002, p. 2), Europeans have labelled those people who do not share the Western worldview as "uneducated, uncivilised, superstitious, primitive, bizarre or untrustworthy", grown within the perspective confines of African thinking and the integrated issues of the curriculum

³WIPCE 2017, 24–29 July in Toronto (Canada). The theme of the conference was "A Celebration of Resilience". The rationale for the conference was to examine the role and impacts of indigenous education on truth and reconciliation around the world. The conference was a "check and balance" of the "renaissance" from, I do not understand FROM the experience of recovery from the legacy of global colonisation. The President of the host Six Nations Polytechnic, Rebecca Jamieson, reiterated the importance of acknowledging the resilience of the indigenous people who had retained their languages, knowledge, ceremonies and ways of being alive despite all efforts to eradicate them.

which remain untapped. This issue was highlighted in the views on education articulated in South Africa's White Paper of 1996 as part of culture, which appears to have been clouded by a mixture of interests, ideologies and institutional procedures in the political domain. The convictions about the validity of indigenous knowledge may be traced back to international forums attended by myself on IKS in the late 1990s in Australia, as well as the New Zealand History of Education Society (ANSHES), which to a large extent influenced the research design, which is also interpretive in this study.

The study presents an outline of some of the concepts from Alaska (representing Canada), Australia and New Zealand on the integration of IKS into the curriculum. The definition of the concept of IKS in the Alaskan context provides a vivid description of a "silver line", which is a concept in Alaskan indigenous knowledge that refers to the long familiarity with and connectedness to a particular place and which may be of benefit to all IPs throughout the world. As suggested by Barnhardt and Kawagley (2005, pp. 8–23), this knowledge may benefit everyone, including educators and scientists, as the world searches for more satisfying and sustainable ways to live on this planet. The reason for using the Alaskan concept as a frame of reference for a holistic curriculum was based on the fact that it encompasses a rich ground for knowledge systems and their intersection with other worldviews.

The said conceptualisation of IKS may be viewed as the framework for the salient features of an envisaged interface between traditional knowledge (TK/IK) and Western science traditions (WST) which will eventually represent a model of a perceived, culturally responsive curriculum in South Africa. The assertion by Barnhardt and Kawagley (2005) above also explains the reason why Canada was selected as one of the three countries that has shown significant resilience in the country's experiences of recovery from the legacy of global colonisation and reconciliation by holding the government to account in reclaiming the education systems of the IPs and the preservation, protection and promotion of their languages and cultures.

The view above is echoed by Barnhardt and Kawagley (2005) in their reflection that Alaska and other indigenous cultural regions of the world, such as Australia and New Zealand, provide a natural laboratory in which indigenous and non-indigenous scholars may obtain first-hand experience in integrating their studies of learning and indigenous knowledge systems. This notion of a "connected" curriculum has been captioned on almost every site found during the search for an IKS integrated curriculum in Canada, Australia and New Zealand, as well as other countries such as the Philippines and India. It is, thus, for this reason that the Alaskan culturally responsive curriculum model was used, in conjunction with curriculum models in the other selected countries of Australia and New Zealand, to obtain an understanding of their conceptualisation of IKS with reference to the Alaskan culturally responsive curriculum model as an example.

1.7 RIGOUR OF THE STUDY

In order to ensure the openness of this study, the validity of the study was tested continuously by means of quarterly presentations to my peers and yearly Retreats presentations to the SARCHI's Circle of Elders. The purpose of the said presentations was for purposes of reviewing methods of data collection and offering suggestions on shaping this study so as to reach the desired completion. The transdisciplinary international and national SARCHI Fellows also conducted critical reviews on the feasibility of the study and offered further inputs and suggestions, thus contributing to shaping the course of this study.

This process of building transparency was declared to the University of South Africa (Unisa) College of Education Research Ethics Committee (REC) who subjected my proposal for the study to a critical review. However, the application for ethical clearance was not granted at the first submission. Corrections were suggested by the REC before a valid clearance certificate was issued.

1.8 ETHICAL CONSIDERATION

Following the corrections suggested by the REC and compliance with all the ethical Unisa research requirements, a certificate of acknowledgement was eventually granted (see Appendix 1) by the Unisa College of Education Research Committee (UCERC), sanctioning the study. The intended research design, research methodology, research methods and the handling of data were also acknowledged by the UCERC. I defended the study prior to final submission in order to meet the SARCHI-DE's final ethical requirement, which is focused on shifting the dual intentions of "owning" one's knowledge and owning up to it in public and, specifically, on enhancing SARCHI-DE's objective of transdisciplinarity and leadership building in practice.

1.9 DELINEATION OF THE STUDY

The temporal focus of the study was informative and related to publications from 1836 to 2017. The reason for this lengthy period was related to the fact that IKS has only been deemed to be a significant academic discourse since the 1970s, as a result of its marginalisation through colonial legacies and also because the lack of recognition of IKS as being, quite a sciencey the elite in countries such as Latin America (Bolivia) and America. Of the three countries, that is, Australia, New Zealand and Canada, that were used as purposeful samples to investigate their significant practices in relation to the integration of IKS into the curriculum, Canada emerged as the one country where the IPs demonstrated active resilience in reclaiming their cultures and knowledge systems and, hence, the Canada situation in juxtaposition with the challenges faced in South Africa in respect of sharing the "dark past" of the racial exclusionary practices of apartheid.

1.10 UNDERLYING ASSUMPTIONS

This study was based on the following underlying assumptions:

- A. The efforts by the Department of Basic Education in South Africa to transform the curriculum by integrating IKS into the curriculum continue to lack meaningful application. This issue has created a gap, which I felt needed to be explored against the background of emerging concepts in development education as proposed by SARChI-DE.
- B. At the time of the study, the education system in South Africa was still mired in a narrow definition of the transformation of the education system, which defined education from a “monoknowledge” approach to knowledge that has its origin in the Western perspective that continues to question the indigenous perspective as valid knowledge.
- C. Challenges relating to the integration of IKS into the curriculum in Canada in particular and elsewhere have not deterred the IPs in these countries from forging ahead in holding their governments accountable in respect of attaining education for reconciliation.
- D. Teachers, as educators in South Africa, do not wish “to cut the umbilical cord” of Western knowledge (WK) to which they are attached and thus they do not wish either to acknowledge or learn from what their learners bring from home.
- E. The knowledge of the elders has not yet been acknowledged and recognised as valid in educating and guiding educators on the transformation of the curriculum by means of integrating IKS into the curriculum for basic education in South Africa.

1.11 CHAPTER DIVISION

CHAPTER1

This chapter provides the background to my motivation for conducting study. In other words, it discusses the motivating factors that prompted me to embark on this type of research enterprise. In particular, the chapter explains why I chose to undertake my studies with the SARChI-DE. The chapter then presents the research topic, namely, the transformation of the education curriculum in South Africa by means of the integration of indigenous knowledge systems (IKS) into the curriculum. This includes a discussion of relevant experiences in Canada and South Africa. The chapter also unpacks the salient concepts and the key terms pertinent to the dissertation’s title, the research aims and research objectives as guided by the research questions, as well as the

research design, research methodology, research methods, the limitations and a delineation of the study. The chapter then presents a summary of all the chapters.

CHAPTER 2

This chapter provides an overview of the conceptual and theoretical framework used in the study. The conceptualisation is geared towards addressing the following problem, namely, the gap in the meaningful transformation of the curriculum by integrating IKS into basic education in South Africa. In order to render the said conceptualisation of IKS meaningful, an overview is provided of new, emerging concepts in development education that may enable a recovery from the assimilation education system implemented in South Africa. Using the notion of “transformation by enlargement” (TbE), new inclusive paradigms have been suggested as guidelines for transforming the curriculum, so that it can fulfil its reconciliatory purpose of greater relevance to the needs of the local communities and the aspirations of the learners. These new, emerging concepts are explored in detail in Chapter 3.

CHAPTER 3

This chapter provides a reflection on the theories that preceded the much-anticipated democratic system of education, which was introduced in South Africa in 1994. Before 1994, South Africa was governed according to the theories of apartheid, known globally as racial segregation. As applied to the education system in South Africa, these theories led to the establishment of a system known as Bantu education with the funding of the education of black people of African descent being separated from that of the white people of European descent. The education system for blacks was under resourced and inferior compared to the white education system, which was well resourced and superior to that of the blacks. It was thus imperative that the post-1994 dispensation address this imbalance. Chairs were set up by the DST in collaboration with the NRF as instruments of transformation in education. SARChI-DE was one such chair, epitomising the new, emerging concepts and aimed at transforming the education system and its curricula in South Africa.

CHAPTER 4

This chapter discusses the history of assimilation in Canada, South Africa and elsewhere where the identity of the indigenous learners (IL) has been compromised by colonial stereotypes in education, leading to the IL then underperforming socio-economically in their respective countries. This situation has perpetuated the cycle of poverty in which the IPs live. The precarious situation experienced by IPs, as highlighted, led to their becoming liabilities in their countries and being at the mercy of local welfare systems. Canada, in particular, viewed education as the way in which

to liberate the IP in the country from this inherited poverty and elevate the competitive edge of the IL by means of new paradigms that were reconciliatory in approach. These measures are discussed in detail in Chapter 4.

CHAPTER 5

This chapter contains a synthesis of the South African and Canadian cases with regard to the theories for the transformation of the curriculum, as highlighted in Chapter 3 of this study. These theories were placed in the IK context in order to demonstrate their connection to an envisaged, transformed curriculum for basic education in South Africa. The challenges that were experienced during the process of the integration of IKS into the curricula in both cases were highlighted. In both cases, it emerged that teachers are the main agents of change in the transformation of the curriculum by integrating IKS at the basic education level. It has, however, been found that teachers in some instances in both South Africa and Canada interpreted the implementation of IKS in different ways. The majority of research conducted in South Africa has shown that science continues to be regarded as the “knowledge supreme” that must be treated with respect and that there is a “one-way” approach to transforming the curriculum, namely, including IK in the science discipline and not the other way around. By being culturally responsive, the Canadian case is shown to be a focal point of reference for a curriculum in which IKS is integrated. Of note in this chapter, is the suggestion of a model of a curriculum that is Afrikology based for the meaningful integration of IKS into the curriculum for basic education in South Africa.

CHAPTER 6

RESEARCH METHODS

The focus of this study was the experiences of human beings, that is, indigenous communities that one cannot quantify by means of statistical analysis. As it was not possible to quantify this, it was decided that the qualitative methodology would be the most appropriate methodology to be adopted. The study used desk research as the research design that enabled me to learn about the experiences of other IPs by “visiting” other countries while in my office and using my laptop computer. The case study was used to determine cases that provided information on the way in which countries such as Canada have tried to integrate IKS into their curricula. Other selected case studies were also accessed to determine their findings on the active integration of IKS into the curriculum and how those findings could be juxtaposed to selected South African case studies so as to uncover lessons that could be shared in respect of the development of an IKS integrated curriculum.

CHAPTER 7

CONCLUSION AND WAY FORWARD

This chapter reflects the findings of the study that emerged from the research in question, and how these findings may inform the exploration of the construction of guidelines to produce an ideal framework for a suggested model of an IKS integrated curriculum for basic education in South Africa. The final words, but not “the end” of this study, are provided, as it envisaged that the study will be of significance to the Department of Basic Education and other stakeholders in offering meaningful suggestions for guidelines for an anticipated model of a curriculum that integrates IKS into the curriculum for basic education in South Africa.

CHAPTER 2

CONCEPTUAL AND THEORETICAL FRAMEWORK

2. INTRODUCTION

A theoretical framework is a reflection of the researcher's view of the world and thus, in the research context, how the researcher orients his/her study. This suggests that the theoretical framework points to the theoretical outline that provides guidelines for investigating the proposed phenomenon. This, as elevated by Creswell (2014); (2009, p. 208), may bring frameworks and ideas to the inquiries in question. This highlights Swart and Pettipher's (2011, p. 9) view on the usefulness of a theory in terms of its ability to provide a set of organised principles that, together with contextual knowledge, may generate insights into a specific situation, theory. Against this background, this study is grounded in the SARChI's transformation concept of transformation by enlargement (TbE), which, it was believed, could be an idea that may advance the construction of new, emerging concepts that could play a role in suggesting a model for integrating IKS into the curriculum for basic education in South Africa.

Currently, one of the most important global issues in education is concerned with the knowledge of IPs and its reconciliation with the education system, so that it can be rendered meaningful in as far as equality is concerned. This issue engages the concept of cognitive justice. This is one of the concepts running throughout the history of all IPs who have been subjected to "cognitive imperialism", as argued by Battiste and Youngblood (2000) in their discussion on decolonising cognitive imperialism in education. They regard this as a damaging myth about indigenous knowledge (IK) and heritage, languages, beliefs and ways of life which is perpetuated by establishing Eurocentric science as the dominant mode of thought that distrusts diversity and continues to jeopardise all indigenous people, even in the 21st century (Battiste & Youngblood, 2000, p. 87).

The assertion above by Battiste and Youngblood (2000) gives rise to the question about the strategy that may be used to rescue IPs from this ongoing cognitive imperialism, which is continuing to manifest in different forms. For example, in a report, Dr Erica-Irene Daes (July 1999), Chair of the Working Group on Indigenous Populations, condemned the widespread and continued exploitation of IK and its heritage by Eurocentric institutions and scholars, describing this as the final stage of colonialism that is resulting in the exploitation of the assets of IPs in the form of their intellectual property. It is evident that any state in the world that is still exploiting IPs and their heritage by institutionalising Eurocentric thinking and scholarship is taking the world

back to the stage where the rights of IPs were violated. This has been something that has been condemned, according to the United Nations Report of the Declaration of the Rights of IPs (2007).

2.1. Cognitive Justice

In response to the question on cognitive imperialism raised above, cognitive justice emerges as a concept that speaks to the issue of systems of education where the IKS of diverse indigenous communities has been subjected to European thinking in the school curricula. European thinking in the curricula cripples the thinking of indigenous learners to the extent that they are subjected to “mechanical learning” in terms of which learners may “know” a body of transmitted knowledge or set of skills without knowing how to learn or apply the acquired knowledge within a free space. This scenario has been poignantly captured by Battiste and Youngblood (2002, p. 88), who compared these learners to “students with no inner sense of truth or justice”. This scenario and its effects are depicted in the diagram below.

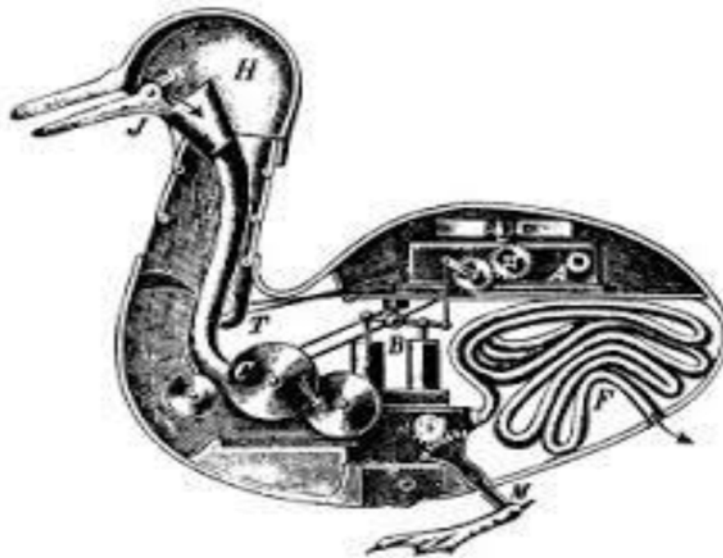


Figure 2: "Crippled Cosmology" in relation to indigenous learners (adapted from Mackenzie, 2014, p.22)

Based on the above it is evident that this lack of freedom reflects the concept of mechanistic learning, which often characterises a curriculum that is still trapped in the pursuit of the objective of transmitting information instead of basic knowledge – a situation which has become a stumbling block to the goal of education, which should be the pursuit of the development of the individual's freedom to learn for lifelong learning. Cognitive justice, as defined above, should enable an indigenous learner to self-define him/herself in the way in which, in my opinion, a free bird flies. Of relevance here, is the metaphor of a free bird that goes like – “if you love a bird at least let it

sing in its own voice” or “let it fly freely” (Exploring How and Why Birds Sing, www.wvdnr.gov; www.birdlife.org) as opposed to the image of a bird demonstrated in Figure 2.1, that looks like, loaded with technological apparatuses that are creating a barrier to its normal movements. In terms of the cognitive development of an indigenous learner (IL), the latter image may reflect a crippled cosmology, which is rendering this type of a learner incapacitated to learn meaningfully and inhuman. The scenario of the bird above may then explain why cognitive justice may be a necessary precondition for an indigenous renaissance (IR), which will bring back into the education system the humanity that science has almost destroyed. The image of the bird above may be equated to an IL’s crippled cosmology as a result of mechanistic Western knowledge that has stifled the indigenous ways of knowing, thinking and doing, thus rendering the indigenous learner “backward” in his/her ability to compete globally in areas of knowledge.

The metaphor of a bird that is obstructed in flying and singing freely as a result of being overloaded with the mechanistic knowledge systems of the West, which have reduced the bird from being a normal bird that is able to fly freely, to a bird with only “one leg” (mono knowledge, in this case, assumed to be science) on which to stand, illustrates a situation that may result in unbalancing the cognitive development of an indigenous learner and rendering them incapable of withstanding the challenges of globalisation. These cannot be addressed if the individual concerned is forced to balance on one leg only. This metaphor raises ironical concerns about “scientisation” and its objectification of knowledge; that is, its violence dehumanises information through partial selection and the loss of the valuable meanings of lived experiences.

2.1.1 Cognitive Justice in View of Indigenous Knowledge Systems

The type of relevant knowledge referred to above is the knowledge propagated in the education system that will make a meaningful contribution to overcoming the endless list of challenges of the 21st century, including poverty, wars, crime, terrorism, unemployment, climate change and hunger. This notion has been articulated by one of the South African Chair in Development Education (SARCHI) fellows, Shiv Visvanathan (2000), in the following way: “Local knowledges, tribal knowledges, civilisational knowledges all need a site, a theatre of encounter which is not patronising, nor preservationist, not fundamentalist, open and playful. Without this mix of theory and vision, the communities of knowledge one is searching for might be stillborn” (Visvanathan, 2000, cited in Odora Hoppers, 2009, p. 23). If this enterprise is to take effect, cognitive justice must be applied to the IK, which has been debased for far too long. This may be interpreted as a means of democratising knowledge – a “meeting of the knowledges” – not just as statements of methods but also as meetings of ways of life that may bring new meanings to life itself.

Meetings of ways of life will take place only if terms are negotiated, with the diversity of knowledges being acknowledged without any attempt to change the other knowledge. This

implies the democratisation of knowledge, whereby the cognition of the difference of other knowledge systems is equated to one as invaluable or incomplete without the other. The notion of access to any knowledge other than Western knowledge as cognitive justice is echoed by Odora Hoppers (2009, p. 17), as one of the most important criteria of the fraternity of knowledge and the right of different forms of knowledge to survive creatively and sustainably.

Cognitive justice in this case represents the highest order of reversing the formula of the toxic hierarchy of knowledge inherited from the Western knowledge system. It is, thus, hoped that the integration of IKS into the curriculum for basic education will serve as an “antidote” to the said “toxic formula” and that the perceived integration of IKS into the curriculum for basic education in South Africa will, furthermore, propel the functionalisation of cognitive justice in the epistemology. It is thus time to acknowledge, borrowing from the concept of “colonial dislocation” as cited by Nandy (1997), Rahnom (1997) and Prakash (1995, p. 6) and Benhabib (1996) in Odora Hoppers (2015) and Odora Hoppers’ (2009) concept of “democracy of difference”, that “the constitutive rules of the game need to change, and that new forms of power sharing and problem solving that transcend the limits of voice and resistance need to be accomplished”.

This is, in fact, what this study hopes to bring to the public domain of knowledge generation, by arguing for the addition of a new script in the curriculum for basic education that will focus on a new pedagogy from an African perspective that will demonstrate that different cultures of knowledge are emerging, in the realisation that the theories of the West that were based on critical reason have come to nought. As Nandy (1983, p. x) asserts, Descartes is not the last word on reason, nor Marx on the critical spirit. This assertion illustrates the fact that a new paradigm shifts in the way of looking at knowledge holistically would be made possible by the integration of IKS into the curriculum, rekindling the production of knowledge that would be to the common good of South African society.

The curriculum should, therefore, be expressed in comprehensive and user-friendly documents such as curriculum frameworks and subject curricula/syllabi and in relevant and helpful learning materials such as textbooks; teacher guides and assessment guides (UNESCO, 2017). This illustrates the background to the anticipated curriculum which is the focus of this study. The study argues for a new interpretation of the curriculum that would lay bare the building blocks of the “hidden curriculum” by showing that IKS integration into the “written curriculum” may change the course of the hidden curriculum. This is done by rendering it an “open curriculum” that takes into account the needs and aspirations of the society at large, both indigenous and non-indigenous.

According to Cecilia Braslavsky (1999), the term “curriculum” refers primarily to the existing contract between societies, the state and educational professionals with regard to the educational experiences that learners should undergo during the total developmental phases of their lives

(United Nations Children Fund, 2000). Furthermore, Braslavsky mentions that for the majority of writers and experts, the curriculum defines the (i) why; (ii) what; (iii) when; (iv) where; (v) how; and (vi) with whom to learn. In other words, the curriculum takes into consideration the holistic aspects of the learning environment with the learner at the centre of the learning enterprise. It may, therefore, be suggested that although Braslavsky compartmentalised the definition of the curriculum, she did reiterate Alvior's (2014) view of the role of the "sabre-tooth curriculum" which dates back to the historical seminars of Dr Peddiwell (1939). These introduced the notion of the "first man" who designed a systematic curriculum that would sustain his children and their tribe long after he had died. This type of a curriculum was likened to something that endures through changing conditions like a rock standing squarely and firmly in the middle of a raging torrent with the sabre-tooth curriculum as one of those rocks. Them (Peddiwell, 1939).

The analogy from the exemplified sabre-tooth curriculum is about teaching learners through a curriculum that was experiential in relating to skills crucial for their survival and which was relevant to society's need for sustainability. This is the type of curriculum that may be realised if the integration of IKS into the curriculum is viewed on a deeper level in that it will develop a "critical learner" who will be able to learn beyond the "written curriculum" towards lifelong learning (LL) even after they he/she has left school.

It is clear from the above that, in developing a curriculum, care should be taken to construct the content around a theme based on an indigenous perspective. For example, in the South African context this could be Afrikology, which, as highlighted earlier, has the capacity to rekindle those IKS that have been lost to scientism or which have been side-lined in the classroom curriculum. It is evident from the various definitions of the curriculum stated above that the curriculum is perceived as a vehicle for changing every society to take a human development course. This may also apply to South Africa in respect of transforming its education system by enlarging it to integrate IKS into the curriculum for basic education and, thereby, using the African perspective based on the philosophy of Afrikology as a central point. This is currently lacking in African education systems at large. It is for these reasons that the researcher has referred to the sabre-tooth curriculum mentioned above as the nature of a curriculum that depicts sustainability. Hence, this study argues that the integration of IKS into the curriculum for basic education in South Africa becomes a necessary condition for the role that may be played by IKS in humanising current scientific practices.

The curriculum has a gate-keeping function in terms of what to allow or not to allow to be passed on to young minds, which are the future of any society. Among others, the curriculum plays an important role in transporting culture from one generation to the next. It is for these reasons that the researcher proposed a thesis based on the integration of IKS into the curriculum for basic

education in South Africa. In this study the following question becomes crucial, namely, what type of a curriculum can be relevant for sustainable living? Such a curriculum reflects quality education that should be delivered through learning outcomes and mediated by skilful, well-prepared teachers. It is for this reason among others that this study proposes a type of curriculum that resembles a sabre-tooth curriculum that integrates all of the basic human necessities for sustainability. What then is an integrated curriculum? An integrated curriculum is a curriculum that relates the connectedness of its content to the entire cosmos, including other systems of knowledge, for example IK in this case. This type of connectedness may be explained with reference to the concept of Afrikology which deliberates on the wholeness of knowledge as it was generated on the basis of all knowledges. This concept will be engaged in a comprehensive manner in this chapter of the study.

2.2 Scientisation

This argument brings to light the issue of the anomaly of the situation the world over and in South Africa in particular, where it would appear that scientific advancement and technological development are failing to change world systems and address the world's problems. Such problems include escalating unemployment and an escalating crime rate as well as environmental degradation and the prevalence of deadly diseases such as HIV/Aids. South Africa continues to occupy the bottom position in the international benchmarking of education as per the Gross Development Project for Mathematics, Science and Literacy Performance, as depicted in the TIMSS reports (1995, 1999, and 2000; Reddy, 2012, of the Human Science Research Council [HSRC]). This clearly illustrates the country's poor performance regarding its international competitiveness in the area of mathematics, science and literacy. Globally, a country's educational performance may be regarded as a reflection of its economic growth. This situation concerning the poor quality of education in South Africa was bemoaned by Trong (in Spaul, 2012), as well as the Minister of Finance, Pravin Gordhan (in Spaul, 2013), who lamented the poor quality of education in South Africa and urged non-governmental organisations such as the Kagiso Trust to rethink ways of improving the poor outputs of the education system which impact negatively on South Africa.

According Odora Hoppers & Richards, (2011, p. 39), in analysing Kuhn's (1962) terminology of a 'paradigm' in relation to bringing IKS and modernity's other in addressing the anomalies in centres of knowledge production, they advocate for a new paradigm that will transform the production and dissemination knowledge that will be more useful for solving world problems. Their advocacy for an alternative paradigm is based on the fact that, the advancement of science and technology seem not to be winning in addressing the recurring anomaly of exploding accumulation of knowledge that fails to provide solutions to humanity's critical problems. Pressing problems like,

hunger, poverty, climate change, crime, unemployment and poor quality education systems among others, need change of paradigms to new ones like IKS that may bring about consensus framework for transformation of the curriculum in this case.

It may thus be suggested that cognitive justice is a relevant tool for changing the hopeless picture of education in South Africa by restoring it to a position of hope for future generations of learners. Cognitive justice features in the right of various forms of language to survive creatively and sustainably. The notion of creativity highlights the issue of the freedom – and not under duress – to assimilate any form of knowledge. This is the milieu in which creativity and full potential may be realised using an enlarged epistemology, termed by SARCHI-DE as “transformation by enlargement” (TbE). In this space of TbE, previously marginalised knowledge systems can be regained towards the restoration of the livelihoods of indigenous communities without coercion, in such a way that they are also able to enter into a dialogue that can determine the sustainable nature and pace of the development they require.

Cognitive justice, as understood above, should be perceived as a new cognitive tool that takes a collaborative approach to the enterprise of epistemological enfranchisement. This tool should form the hub of any envisaged transformed curriculum that is conscious of the diverse cultures and multiple identities which, among others, according to Battiste (2013, pp. 68–76), should aim for “indigenous renaissance and collaborative conscientisation”. These concepts are deliberated upon in the subsequent sections and chapters of this study.

2.3 Transdisciplinarity and Afrikology

As succinctly expressed in Jacobs (1989, p. 4), transdisciplinarity is “a knowledge view and curriculum approach that consciously applies methodology and language from more than one discipline to examine a central theme, topic, issue, problem or work”. This view of transdisciplinarity presents Afrikology, explained in chapter 1, as a lens through which the researcher viewed this study. It is through transdisciplinarity that Afrikology may contribute to the other sites of knowledges through interconnecting disciplines. This has been interpreted by Nabudere (2012, p. 32) as a means of finding deeper ways in which we may reconnect with the ancient sense of wholeness, as created by ancient Africans, only to be endorsed by, among others, the Greeks.

This view of transdisciplinarity engages the critical role it may play in placing Afrikology at the centre of the global stage, strengthening the other sites of knowledges by working with them and, through them, claiming Africa’s space within the community of knowledges. With reference to the account of why IKS can be a functional concept in knowledge generation from an African perspective, I draw from the sources of knowledge generation in Africa based on the cosmology

of Afrikology, which traces the origin and progress of knowledge to the heart, with emotions being part of knowing, and with the *logos* (the word), which is connected to the tongue and emotions. This scenario, of “heart and emotions” depicts a human being’s totality of thinking, which can be expressed in Nabudere’s (2011) concept of wholeness as follows: “It was from this word that human consciousness first emerged and it was from that consciousness that humanity emerged as thinking and acting agents with language with ‘word’ as the active cultural achievement”. It is for these reasons that a proposition for the integration of IKS into the curriculum should not be viewed as baseless but as substantial, based on the centrality of Afrikology as a source of knowledge in Africa.

It may, therefore, be said that Afrikology in this case is dedicated to advancing IKS and mainstreaming them by reversing the marginalisation of IK in the production of knowledge and returning it to its place as part of the *logos* (the beginning of the creation of knowledge). In my view, the “big bang” view of Nicolescu (2002, in Nabudere, 2012, p. 32) may be used as a framework for conversations between the learning areas in the curriculum for basic education. The question therefore arises: What then is the point where Afrikology and IKS merge? Afrikology will be conceptualised first before the issue of its merging with IKS is discussed in the subsequent section.

2.3.1. Afrikology

In this case, Afrikology is argued from its vantage point of being a humanising concept for African knowledge and the continent of Africa as the cradle of humankind. Colonial knowledge dehumanised Africa and stripped it of both its dignity and its inherent status as the cradle of humankind. The philosophy of Afrikology is the only philosophy thus far that has shown that Africa as part of the human race has survived, based on its knowledge, which was both scientific and valid even before colonialism. Survival may even be an understatement compared with sustainability, which could perhaps be a more plausible concept on the basis that education in Africa before colonialism preserved the heritage of the community and the physical environment and sustained the communities’ knowledge production centres in respect of core disciplines such as law, education, economics and medicine.

Afrikology positions education at the centre of sustainability in terms of knowledge production that was both communal and relevant to societal needs. This knowledge was preserved in the form of oral tradition, handed down from generation to generation. Mokhatar (1990), in *Politics of knowledge production in Africa*, among others, posits that Afrikology bears testimony to the fact that before colonialism, Africa was a hub of technology and industrial knowledge in states such as Nok in Nigeria, Meroe the so-called “Birmingham of Africa”, Egypt and the ancient kingdoms of Ghana (Nyachonga, 2014, p. 57). In addition, according to Ogutu and Kinyanjui (1997),

Afrikology highlights the historical records of the capacity of African knowledge systems to utilise science in the transformation of the jungle swamps of the Nile River delta into a site for food production.

It is interesting to note that in the area of medicine, pharmacology in Africa was a discipline that was used to manage both human and animal diseases. Nyachonga (2014) adds one of the critical aspects of knowledge production in Africa, namely, political knowledge for posterity and for the continuity and sustainability of society. It is evident from some examples that IKS played a dynamic role in keeping pace with societies' development, thus enabling adaptation, self-reliance and sustainability from generation to generation by means of oral tradition.

A salient point of Afrikology in terms of knowledge production on the continent of Africa is the notable centres of knowledge production that were established such as the University of Sankore, later known as University of Timbuktu in Mali, which was an icon of Afrikology and a wonderful intellectual nucleus for its high level of education including primary, secondary and tertiary education. According to the Nyanchoga (2014), the superior degree was an equivalent of a doctoral degree. This university produced notable scholars such Ahmad Babu as-Sudane (1564–1627), who became the final chancellor of Timbuktu University before the Moroccan invasion in 1593. He produced 60 books on law, medicine, philosophy, astronomy and mathematics. These centres of knowledge production were indeed repositories of Afrikology, which were unfortunately destroyed during the colonial era with the introduction of the colonial education system that was dialectical to African tradition, economic orientation and governance (Antoinette, 1926; Ceassaire, 2000, cited in Nyanchoga, 2014, p. 58; Fanon, 1991; Kahinde, 2006).

As indicated earlier, Afrikology is an epistemology of hope that has the capacity to place Africa's IK in a position where it is on a par with other knowledge systems. It is also important to highlight that Afrikology should not be reduced to an "African only" concept because of its wholeness in embracing all humanity as illustrated by Nabudere in *Afrikology: Philosophy of wholeness* (2011):

Afrikology is not African-centric or Afrocentric. It is a universal scientific epistemology that goes beyond Eurocentricism, or other ethnocentrisms. It recognises all sources of knowledge as valid within their historical, cultural or social contexts and seeks to engage them into a dialogue that can lead to better knowledge for all. It recognises peoples' traditions as a fundamental pillar in the creation of such cross-cultural understandings in which the Africans can stand out as having been the fore-bearers of much of what is called Greek or European heritage as fact of history that ought to be recognised, because from this fact alone, it can be shown that cross-cultural interaction has been a fact of historical reality (Nabudere, 2011, p. 92).

The illustration above puts Afrikology on the map of knowledge equality, in view of its scientific uniqueness which was all-embracing of humankind and not just Africans. Also, the above illustration demonstrates that Africa thrived on the legitimate knowledge systems of her indigenous communities. Afrikology and its deep-rooted knowledge and wisdom, namely IKS, sustained all humanity and enabled people to “live to tell her story”. Hountondji (2002) contends that Afrikology will enable IKS to recover the IK and the systems intricately woven around them, thus making possible the move towards a critical but resolute re-appropriation of the practical and cognitive heritage of millions of people, both on the African continent and elsewhere in the world. It is, in turn, the re-appropriation of this heritage that could provide new clues and direction to the visions of human society, human relations, sustainable development, poverty reduction and scientific development in the next millennium, all of which will never be resolved while still using the existing ethos of the Western framework alone (Hountondji, 1997, p. 39). Afrikology therefore has to be put on a pedestal at the centre of IKS.

2.3.2. Afrikology and Indigenous Knowledge Systems

Indigenous knowledge systems (IKS) and other philosophies such as the African Renaissance, African philosophy and initiatives such as NEPAD aim to affirm the humanity of the African person in the global setting. In relation to this aspiration of African humanity, Kondlo (2013, p. 147) states:

“The political and intellectual worlds are witnessing increasing ideological multiplicity heterogeneity, shift, clash and conflict. Thus, we have the emergence of a multi-cultural university, cultural studies, identity politics, and the associated ‘culture wars’; revisionist history, and historiography, both left-wing and right-wing and the associated ‘history wars’; post-Kuhnian science studies, constructivist-pragmatist epistemology and the associated ‘science wars’; and, finally the continued playing out of post-structuralist thought in the humanities and social sciences and associated ‘theory wars.’”

The citation above highlights the fact that, in these times of contemporary societal challenges, the world should be thinking beyond disciplinary boundaries in its dealing with the modern complex world. In other words, it is time to expand the thinking to include the construction of a humanising pedagogy which is geared towards the construction of knowledge and experiences that could facilitate both skills development and intellectual competence, as well as create socially engaged critical citizens with a capacity for ethical leadership (Kondlo, 2014, in Mwansa, 2016, pp. 4–5).

It is possible that Afrikology as defined above could, using a transdisciplinary approach accomplish, the inevitable by dismissing the myth that Africa is unable to produce knowledge on its own, thus also challenging what Nicolescu (2002, p. 42) refers to as the “modern Tower of

Babel” (Genesis 11:1–19). It is not possible for “Babelisation” in my opinion to continue to tackle the major challenges in the world, such as the continued prevalence of the old viewpoint and genocides of different kinds. Afrikology may be viewed as a premise for an antidote that emanates from the continual impact of Western education on mental (psychological) control through the schooling system. Afrikology’s mainstreaming of IKS in the education system could help to alleviate the problem of the deficiency of IKS in the scope and content of basic education, which teachers in South African classrooms continue to use as an excuse for deferring the integration of IKS meaningfully in their learning materials.

In seeking ways in which to transform South African society from a society of “deluded hybrids alienated from their culture and tradition and individuals who longed for alien and ‘more civilised’ cultures of the west”, as suggested by Ngugi wa Thiong’o (1981), Afrikology and IKS may be seen as vitally important tools for redefining the world and its cosmologies. It is on the basis of this argument that the type of education system, that is, “education for subordination, exploitation, creation of mental confusion and the development of underdevelopment”, as argued by Rodney (1972, p. 264), may be prevented from producing the same type of education that fostered an education system characterised by inhumanity and injustice (Martin, 2012) and which led to the underdevelopment of South Africa’s intellectual resources.

The relationship between Afrikology and IKS may bring about a new worldview, as concepts of temporality and spirituality (Nabudere, 2010) are generally not conceived as being part of knowledge production within the modern science perspective. IKS and Afrikology should be regarded as a fresh beginning in respect of reclaiming the lost African cosmology, bringing it back into the lives of Africans and affording it the same status as other knowledge systems. The interface between Afrikology and IKS should be viewed as an alternative that can supersede the knowledge processes that are market driven and that continue to marginalise IK based on the claim that it is “unscientific”.

The question that could be raised is which language can be regarded as viable for communicating this alternative way of reclaiming the African cosmology. The proposal of Afrikology as a necessary framework for transforming the curriculum for basic education in this study would also bring to the fore the worldview that indigenous languages could be viewed as the only possible means to communicate this African worldview in the vernacular of the knowledge bearer, as we alluded to parity between knowledges above.

The view that Afrikology would enhance the use of indigenous languages in the production of knowledge can be justified by the fact that a worldview can be expressed only in the language of the beholder. This argument qualifies Nabudere’s (2010) traditionalist view that speech is divine in origin and, therefore, the use of indigenous languages as sources of knowledge and instruction

should play a central role in this epistemology. Nabudere (2010) and Kirkness (1998, p. 4, cited in Settee, 2013, p. 1) echo the importance of the vernacular in learning and teaching that is embedded in one's culture, by maintaining that language is the principal means through which culture is accumulated, shared and transmitted from one generation to the next. Language expresses the uniqueness of a group's worldview.

This argument emphasises the fact that using the indigenous language for teaching and learning can prevent the extinction of both the knowledge and the language and also ensures the cultural continuity of the indigenous community's knowledge as it is transmitted by means of language, which may also be seen as power.

2.4 Transdisciplinarity from an African Perspective

As argued by Gergen (1994, p. 138, in Mahaffy, 2013, p. 4), viewed through the lens of the multiplicity of knowledges, the African perspective embraces transdisciplinarity as a feature that is absent from the mainstream Western constructed studies of science. This role of Afrikology has been emphasised by Nabudere (2006), who highlights the way knowledge should be created on the basis of the five senses possessed by the human being. It may, in this case, be suggested that transdisciplinarity brings back life to reality, which has been defaced by science as the only means of absolute truth in knowledge construction.

As epitomised by Nabudere's (2012, p. 32, 45) view, transdisciplinarity constitutes an important feature of IKS in that it is consistent with the notion of interrelationships between IK as a cohort that may assist in transforming the academy for the benefit of the communities. It could be said that academic knowledge in South Africa is detached from local communities because of its compartmentalised scientific nature. However, this limitation of knowledge through compartmentalisation that creates a gap in knowledge construction may be made whole by means of transdisciplinarity.

The concept of the construction of knowledge from a wholeness perspective enhances the rationale for this study, namely, the integration of IKS into the curriculum for basic education in South Africa. Transdisciplinarity, as described in Section 3 of the Transdisciplinarity Charter, which complements disciplinary approaches, occasions the emergence of new data and new interactions out of the encounter between disciplines and offers us a new vision of nature and reality.

Transdisciplinarity does not strive for mastery of several disciplines but aims to open up all disciplines to that which intersects them and that which lies beyond disciplines, (Article 3, Section 3, 2012-06-05). Transdisciplinarity involves the crisscrossing of disciplines and, thus, it can be

enhanced through Afrikology by breaking down the boundaries between various academic disciplines that inhibit our ability to look at realities in a comprehensive manner. Transdisciplinarity, as explained, has the quality of interweaving knowledges, suggesting that even marginalised knowledges like IK can be validated through transdisciplinarity

2.5 Indigenous knowledge systems

Scholars have described IKS differently. Much as there has been universal interest in IK by scholars, there is also the downside of no common agreement among scholars as to what IK relates to. Most scholars have resorted to creating constructs for the IK concept such as indigenous knowledge, aboriginal tradition, indigenous technical knowledge, ethno ecology, local knowledge, place-based knowledge, rural people's knowledge, community knowledge, cultural patrimony, folklore, indigenous heritage (rights), cultural heritage, traditional medicine, cultural property, indigenous cultural and intellectual property (rights), indigenous intellectual property, customary heritage rights, innovations and practices and popular culture or intangible components (Ellen & Harris, 2000, p. 2; Maila, 2007, p. 76; WIPO, 2002, in Ngulube & Lwoga, 2007, p. 118). The different conceptions of IK to date show that this concept continues to be a site of struggle faced by different "power" dimensions.

IKS, as understood in this study, are systems of traditional knowledge that are place-based and local to the original inhabitants of the country/state in question. There are several and varied definitions of IKS. For example, Kippur (2005, p. 247, cited in Botha, 2010) defines IKS as follows: Indigenous knowledge systems generally locate indigenous people in time and space as inhabiting an area over a period of generations before having "their lands and territories, as well as their cultural institutions, violated by states and global forces through acts of domination".

On the other hand, McClure (1989, p. 1) defines IKS as "learned ways of knowing and looking at the world. They have IKS that have evolved from years of experience and trial-and-error problem solving by indigenous people working in their environments and drawing upon resources they have at hand for sustainable living".

Bernhart Ray (1998) in the Alaska Native Knowledge Network defines IKS as "education indigenous to place" based on its adaptive integrity that may be as valid to today's generation as it was for the past generations. Bernhart Ray (1998) emphasises the depth of the rootedness of IK in the long inhabitation of a particular place that offers lessons that may benefit everyone, from educator to scientist, in the search for a more satisfying and sustainable way to live on this planet.

In synthesising all these definitions, definitions of IKS by Odora Hoppers (2004, 2002, p. 8–9) seem to capture a comprehensive definition of IKS with the assertion that, "IKS refers to the

combination of knowledge systems encompassing technology, social, economic and philosophical learning, or educational, legal and governance systems. It is knowledge relating to technological, social, institutional, scientific and developmental systems including those used in the liberation struggle". This definition captures the essence of this study because it addresses the issue of IKS as an "all in one" knowledge in the sense that it excavates the technologies behind the above-mentioned concept of wholeness that, according to Odora Hoppers (2002), should not continue to be debased by relating them merely to woven baskets, handicraft for tourists or traditional dances, and traditional food. As such, this definition has been adopted as a lens for conceiving IKS. In a way, Odora Hoppers' concept of IKS may be highlighting the fact that IKS is not archaic, but is scientific and technological in relation to the said practices and artefacts, and that just as science and technology are viewed as the main subjects that can save the world from poverty, low-quality education, lack of access to justice, and climate change, so too should IKS be valued as the knowledge that can save the world from catastrophes because it is also scientific and technological.

As part of my assumption, IKS continues to occupy a mute role in the curriculum for basic education in South Africa. The Department of Basic Education (DBE) in South Africa has so far not enforced the functional application of IKS in the education system. The DBE has entrusted this application of IKS to teachers. Teachers in South Africa often associate IKS with schooling, and the notion of schooling in South Africa still upholds a worldview that does not recognise the indigenous worldview of an interdependent universe and the importance of place in indigenous societies. The teachers in South Africa are caught up in the limited definition of knowledge as being the prime concern of the Western paradigm. They cannot imagine any other knowledge being valid in comparison to Western science. It is for that reason that the next argument in this study contrasts IKS and Western science as the centre of knowledge production.

2.5.1 Indigenous Knowledge Systems versus Western Science

Advances in Western scientific knowledge and technology as the values of modernism are perceived as aspects that should be rendering the world a better and more progressive place in terms of solutions to ongoing environmental disasters, like climate change, wars, hunger and unemployment. However, the reverse is found to be true. Embedded in the above arguments is the fact that throughout the world, there is a strong realisation that Western science and modern environmental conservative sciences are under pressure as a result of the limitations of their compartmentalised knowledge systems in addressing the intractable problems facing the world.

It is within this context that, fairly recently, scholars and members of the Inter-Governmental Panel on Climate Change (IPCC) made a call, in the case of Africa in particular, for traditional IKS and

practices to be considered in order to assist the continent to cope with the impacts of climate change. The “United Nations (UN) is urging Africa to act on climate change by investing in cleaner “green” technologies and changing consumer habits, as deliberated in Africa Renewal (2007). This call for an awareness on the part of the African continent of the dangers of climate change has been echoed by leaders such as Desmond Tutu when he asserted that: “People of conscience need to break their ties with corporations financing the injustice of climate change” (Archbishop Emeritus in 2015 7–8 December). It is not enough to make politically correct statements on climate change and its negative impact on Africa and globally; this is a dire situation which needs to be entrenched in the global education systems, and in Africa and South Africa in this case, by integrating knowledges that can save the world and the African continent from this impasse. Hence, the call for the integration of IKS into the curriculum for basic education should be viewed as a clarion call.

IPs all over the world have also come to the realisation that their own knowledge practices have been marginalised, subjugated and dominated by Western scientific knowledge systems. This realisation can be referenced to Dei’s (2002, pp. xiii, 6) claims that IPs are appearing in the present day in response to the growing awareness that the world’s subordinated peoples and their values have been marginalised by the rise in influence of Western industrial capital.

Echoing the above view, May and Aikman (2003, p. 139) argue that the call to recognise and respect IK is also situated in the broader struggles of IPs for democracy, social justice and self-determination. In an increasingly prominent way, IPs worldwide have been at the forefront of advocating for better treatment, recognition of and restitution for historical injustices and, more broadly, the recognition of self-determination.

The call for the recognition of IK as legitimate knowledge equal to any other knowledge may be initiated by means of Foucault’s concept of “knowledge power relations” (1980, pp. 1972–177). Foucault’s concept of power in knowledge illuminates the issue of an inextricable link between “power and knowledge”, highlighting the need to be mindful that what counts as knowledge and not knowledge depends on which knowledge form is more powerful than the others. Therefore, it can be suggested that the marginalisation and subjugation of IKS by dominant Western scientific knowledge systems has been a “power” (embedded in colonialism) issue that the Western world has wielded over the ethnic minorities of the colonised world.

Shiva (1993, cited in Dei et al., 2002) further illuminates the origins of this skewed knowledge–power relationship when she points out that colonialism has from its very inception been a contest over the mind and intellect. She raises two important questions, firstly, *what* will count as knowledge? Secondly, *who* will count as an expert or innovator of knowledge? These two questions were central to the project of colonising diverse cultures and their knowledge systems.

Both Foucault and Shiva, cited in the theoretical perspectives of Dei et al. (2002) on IKS, provide deeper, historical insights into the contemporary renewed interest in IKS, which should be acknowledged in any development of a transformed curriculum that recognises IKS as legitimate.

For the transformative aspirations of these curricula to have positive results, the curriculum should be viewed as a viable tool for building bridges between diverse cultures in knowledge systems. In other words, the curriculum should be perceived as a vehicle for transporting any society's transformation from the "old" to the alternative ways of thinking about human development in education. Hence, the curriculum's vital role in "re-thinking" the thinking behind the generation of new knowledge that does not marginalise other knowledge systems like IKS. The rethinking thinking concept of knowledge generation in South African centres of knowledge should be seen as a liberating force of the whole education system, which is still trapped in the single way of viewing European knowledges as comprising all knowledge. According to Odora Hoppers and Richards (2011), the way out of the dilemma posed by ethnocentrism is by "opening the curriculum" from its present state of being "closed" to other knowledge systems, that is, embracing the inclusiveness of the European knowledges and other knowledges.

2.6 Curriculum

The focus of the argument in this thesis is on the curriculum as a reservoir of the contested knowledge that has been marginalised. The argument for the integration of IKS into the curriculum should be located in a space that will serve as a "catchment" area that is receptive to this alternative knowledge. It is therefore important that the term "curriculum" should be unpacked to situate the argument for the integration of IKS in the basic education curriculum in South Africa in the relevant perspective.

Curriculum is not a "problem free" concept and it may be interpreted in multiple ways. For example, UNESCO's definition of curriculum encompasses the following dimensions, namely, that what societies envisage as important in teaching and learning constitutes the nature of an "intended" curriculum. Because a curriculum is usually presented in official documents, it may also be called the written and/or official curriculum. However, at the classroom level this intended curriculum may be altered through a range of complex classroom interactions and thus what is actually delivered may be considered the "implemented" curriculum. What learners really learn (i.e. what can be assessed and what can be demonstrated as learning outcomes/learner competencies) constitutes the "achieved" or "learned" curriculum. Furthermore, curriculum theory points to a "hidden" curriculum, namely, the unintended development of the personal values and beliefs of learners, teachers and communities; the unexpected impact of a curriculum and/or the unforeseen aspects of a learning process.

For the purposes of this study, Afrikology will be used as a point of reference and as a crux of knowledge that may diffuse scientism as the highest standard of morality in knowledge production in the envisaged curriculum.

In an attempt to position transdisciplinarity in relation to Afrikology, the concept of transdisciplinarity has been delineated in the following way by Odora Hoppers (2006, p. 36): “Trans” means between disciplines, across disciplines and all disciplines. This delineation may assist in an understanding of the current world in which one of the imperatives is the unity of knowledge and the generation of knowledge that has transformative heuristics. Transformative heuristics can be classified according to Nicolescu’s (2002, p. 43) three degrees of distinguishing:

- The degree of application (e.g. when methods of nuclear physics are transferred to medicine which may lead to the emergence of a new treatment for cancer)
- The degree of epistemology (such as the transfer of methods of formal logic to the area of general law which may generate some interesting analyses of the epistemology of law)
- The degree of the generation of new disciplines (such as when methods from mathematics are transferred to physics, generating mathematical physics as a new discipline, etc.).

According to Nicolescu (2002), the third degree constitutes a broader goal than just multidisciplinary in the transfer of methods from one discipline to another, in what he terms a disciplinary “big bang” (2002). Nicolescu maintains that this “big bang” has led to an unprecedented understanding of knowledge of the exterior universe, as well as contributing new impetus to the establishment of a new worldview.

Emanating from the above it may be suggested that the problems facing Africa cannot be reduced to single disciplines, that is, either the humanities or the natural sciences, and nor are they about a particular discipline. Instead, it may be said that they are about an entirety of connected disciplines. In an attempt to address the problems facing Africa, as mentioned earlier in this chapter, a transdisciplinary approach may be deemed to be relevant for transforming the way knowledge has been produced to the total exclusion of IPs’ knowledge. The rediscovery promoted by the transdisciplinary approach, as asserted by Nicolescu (2002, p. 1), has had the advantage of meeting the unprecedented challenges of our troubled world. It is for this reason that transdisciplinarity may be the only option for bringing about a functioning democracy with a functional curriculum. Or, to use Nicolescu’s term, a “kind of nuclear democracy” in which all the particles are as fundamental as all the other particles, and one particle is what it is because all the other particles exist at the same time (Nicolescu, 2002).

It is for these reasons that this study epitomises the adoption of a transdisciplinary approach to knowledge generation so that the argument for the integration of IKS into the curriculum is not

confined to modern science alone, as has been the case with the Western approach of disciplinarity applied to knowledge production, which ultimately alienates other knowledge systems like IKS. The following question then arises: How can transdisciplinarity and Afrikology repair the damage caused by modern science, with its structural violence that separates and hierarchises knowledge systems, leading to the relegation of IKS to the lowest strata of knowledges or even to total exclusion from the domain of knowledges?

2.6.1 The curriculum in view of the integration of IKS

A curriculum can be generally defined as the lessons and academic programmes taught in a specific course in schools or any institution of learning. Various dictionaries define a curriculum as the courses offered by schools or the knowledge and skills students are expected to learn, including the learning outcomes they are expected to attain (www.edglossary.org/curriculum).

Curriculum means different things to different people. This suggests that a curriculum consists of fragmentary parts, which has been noted by Ornstein and Hunkins (1993, p. 1) as “a field of study that is elusive and fragmentary”. The nature of this debate and the accompanying misunderstanding have been echoed by Lovat and Smith (2003) in this way:

The word (curriculum) itself is used in many different contexts, by principals in schools, by teachers, by curriculum writers in education systems, and increasingly by politicians. It can mean different things in each of these contexts (Lovat & Smith, 2003, p. 6).

Before I engage in the “value laden” topic of the curriculum, I present an introduction to the meaning of the curriculum, as cited in Alvior (2014), in the interests of understanding the reasons why I decided to investigate the integration of IKS into the curriculum for basic education in this study. With the curriculum being the focus of integration in this study, it would be worthwhile to develop an argument that will engage the curriculum, looking at it from a Western worldview and an indigenous worldview.

2.6.2 Western worldview of the curriculum

In relation to the Western worldview of the curriculum, there are numerous definitions of the term “curriculum” to be found in the literature, with the core meaning being embodied in its Latin derivation from a “course” or “track to be followed” or, according to Marsh and Stafford (1988, p. 2), a “racecourse”. The latter confirms the widespread notion of a curriculum being like a race to be run, a series of obstacles or hurdles (subjects) to be overcome. This then begs the following question: What type of curriculum is envisaged to integrate IKS? In other words, the curriculum envisaged for indigenous learners in this case should be a curriculum that is holistic in meeting

the diverse needs of its learners. This kind of curriculum will need political support from government, professionals and societal members.

According to Goodlad (1960, p. 185–198, 1979), Saylor, Alexander, and Lewis (1981), Marsh and Willis (1999) and Hameyer (2003), the curriculum is a design or plan of institutionalised education in respect of which the planning and development take place in a social context. It involves translating views on the nature of humanity and the universe into educational aims. Posner (2004) refers to the official curriculum as the formal, written curriculum document that covers the practicalities of the “why”, “when”, and “what” as expressed in, for example, other curriculum documents and syllabi, or in school resources such as textbooks and other materials.

It can be suggested that the curriculum is an instrument for bringing about psychological changes in the learners as a result of their activities in an educational setting. The definitions above speak to the actual life situations such as the conditions of war and peace, work and leisure, wealth and poverty, education and “miseducation” that influence curriculum decision-making. Knowledge about learning and the educative process must also be taken into consideration in the context of the abovementioned conditions. These activities also bring to light the most important aspect of the curriculum from a Western worldview, namely, “competition at all costs”. However, this competition at all costs represents a disjuncture between this worldview and the indigenous view of the curriculum, which is about harmony in nature and among human beings. Emanating from the above definitions it may be said that the social context in which curriculum design, planning and decision-making take place involves highly complex political structures through which pertinent data may, or may not, be applied in arriving at curriculum decisions.

2.6.3 Indigenous worldview of the curriculum

A curriculum may be said to be an “ancient” instrument for the teaching and learning that represents the view of every society. This would imply that even during pre-colonial times, IPs imparted knowledge and skills to their children, enabling them to survive by equipping them with survival tools, for example catching fish, hunting animals for food, identifying and gathering roots and edible bulbs and also passing on the knowledge required to identify medicinal plants for curing animal and human diseases. These interactive activities demonstrate the type of knowledge and skills that were imparted to children at an early stage of their lives. The process was one of “holistic learning”. There was no compartmentalisation of knowledge, content and skills; a comprehensive approach was adopted to teaching and learning indigenous learners. At that time, although IPs had no formal education, their children learnt and acquired the knowledge and skills required to survive through experiential learning as explained above. This scenario may be a reason to suggest that even during pre-colonial times, IPs already had a curriculum, which Alvior (2014) terms the “sabre-tooth curriculum”. This has been elaborated in Bilbao et al. (2008) as a

curriculum that involves the total learning experience of individuals not only in school but society as well. This type of curriculum relates to the kind of curriculum that existed during ancient times where the purpose of teaching was for survival. The kind of curriculum envisaged in the case of this study is a curriculum that will be “the best of both”, that is, for survival and competitiveness in the global world.

The above discussion on the curriculum brings us to the investigation in this study, the question of what level of education is intended in curricula in this study? The example of the sabre tooth curriculum shows that teaching a child lifelong lessons starts at the basic development stage, when the mind of the child is still receptive to learning new things that will never be forgotten even in later developmental stages of life. This explains why the researcher opted to situate this study at the basic education level. This argument therefore supports the argument that the integration of IKS into the curriculum may be viewed from the perspective of an intended curriculum.

According to Van den Akker (2003), the intended curriculum is one of three distinct curriculum levels: these are the “intended”, “implemented” and “attained” curricula. The intended curriculum in this study should be viewed as a subject of additive value to the discourse on transforming the education system in South Africa. The transformation of education is a core topic in the public discourse relating to education as a whole in South Africa. Given where we come from with the history of education in South Africa – a history of education that was geared to preparing “blacks” of African descent as domestics for the “whites” of both British and Dutch colonial descents in South Africa – after the end of apartheid in 1994, one would envisage a curriculum that is different from the apartheid curriculum of education for domesticity. Instead, twenty-one years later, the DBE in South Africa released a comprehensive version of the National Curriculum Framework (NCF) for children from birth to four that links to the other curriculum frameworks in South Africa. All curriculum frameworks are based on the Constitution of South Africa. However, in stark contrast, the NCF despite its creation as a basis for transforming and democratising South African society, can be said to be backtracking. This is particularly the case when it comes to the National Curriculum and Assessment Policy Statement for the Foundation Phase (NCAPSFP) for children aged 5 to 9 and beyond (Grade R-12) whereby it aims to:

- Develop individual/citizenship competence through a focus on primary and secondary education
- Create access to higher education
- Help with transition to the workplace (Department of Basic Education 2015, p. 3).

This aim of the NCF highlighted above shows that the DBE has not transcended the assimilation tendencies of an education meant only for preparing learners for the workplace. It does not consider the fact that the “workplace” is still dominated by whites who were the beneficiaries of apartheid education. This background analysis can be suggested as showing that the DBE is still falling short of consciousness of the “hidden” tendencies of assimilation in the curriculum in basic education, where the issue of the indigenous worldview of education for blacks is concerned. The limited nature of the DBE in engaging IKS in the curriculum can be seen in the amount of “space” allocated to raising issues of IKS in the NCF. For instance, IKS is mentioned only twice in this critical document. The first time issues relating to IKS are mentioned is when the issue of indigenous resources is highlighted, but with no concrete deliberation on this issue. The second time is when it is mentioned in the glossary in combination with local knowledge as if the two were the same. A curriculum that is grounded in an indigenous worldview is still not epitomised as a worldview that, in this case, can liberate the blacks in South Africa from a type of apartheid education, with assimilation as the hidden agenda of education for domesticity and an education system that still advances the Eurocentric worldview in the curriculum.

The rich content and holistic nature of IKS in the curriculum can correct this anomaly in the education for domesticity in South Africa, which seems to be a recurring issue in reviews of the curriculum. This is why the call to integrate IKS into the curriculum may be viewed as relevant in a time of conversations about the transformation of the education system in South Africa.

2.7 Assimilation

Assimilation is a plan whereby the colonial powers imposed cultural imperialism on indigenous knowledge. This issue is still being rejected, suppressed and ignored by education systems. Assimilation is continuing to challenge both the consciousness of IPs and their quest for healing from this experience, which resulted in inferior education and high unemployment, with dire consequences for them and a high incarceration rate among indigenous communities the world over. Battiste (2013, pp. 25–27) epitomises this scenario in Canada when she refers to the Royal Commission Aboriginal Peoples (RCAP, 1996, pp. 296–305), which formulated a political agenda for the transformation of the relationship between the IPs and non-IPs of Canada. This report abolished assimilation and its policies and motivated the IPs of Canada to devise new restorative education programmes.

The discussion above led me to the realisation that Canada is set apart and differs from Aotearoa New Zealand and Australia, whose resistance to assimilation education is viewed as subtle because, as in South Africa, cognitive imperialism continues to hold sway in the schools. Moreover, the Eurocentric foundation is still advanced to the exclusion of other knowledges and languages. It may be suggested that the indoctrination of the minds of indigenous learners is

continuing because of forced assimilation through presenting education within a Eurocentric context based on teaching in English, media, books, laws and values.

The scenario above depicts a continuing crisis in the education systems of many indigenous communities and which will be overcome only if the present education system is reconciled with the past of the community in question, namely, IKS which are human centred and without the imposition of the ideologies and self-interest that have tainted Eurocentric education. Such freedom from duress may become the way forward to liberate people who have grown up in a “racist” society, such as South Africa, from doubting every aspect of their being, while at the same time being confronted with the question: Are we good enough to be accepted by the white world? The reconciliation of the current education system with the past would restore learners whose formal education is continuing to lead them away from themselves.

2.7.1 Assimilation Education in South Africa

Assimilation education in South Africa was applied in a “special form” because the British first implemented it in 1832 in terms of the “Anglicisation policy” that applied to both the indigenous people and Afrikaners settler communities that had settled in South Africa after 1652.⁴ Thereafter the Afrikaners applied assimilation to all people of South Africa who were not white, namely, blacks, Indians and coloureds, by means of the policy of segregation which was implemented after 1948 and the Bantu Education system, which was introduced by Verwoerd in the 1950s. The structure of the Bantu Education system was such that schooling for “Africans” was removed from missionary control and brought under the control of a state which was committed to white supremacy through the implementation of apartheid policies. The policy of apartheid underpinned the education system in South Africa via the concept of Bantu Education until 1994, with the coming into being of a non-racial, democratic dispensation. A brief background to the assimilation education system in South Africa is provided below in order to give some indication of its nature before its demise in 1994.

⁴Afrikaners, as a settler community of South Africa, may be traced to the landing of Jan van Riebeeck at the Cape in 1652. Their colonisation of South Africa began with what Simson terms barbaric land grabs (Simson 1980). Their violent land grabs and later the Natives Land Act of 1913 displaced the indigenous people and brought about a major change in the land tenure system for IPs in South Africa (Van Wyk 2003; Mathews 1986).

2.7.2 Background to Assimilation Education as articulated in South African Education Policies

The discussion on the background to assimilation in the South African education landscape illustrates the reality of the black inhabitants of the country. The South African education landscape has always been inextricably linked to the country's political situation. The creation of social classes that were perpetuated by apartheid are a formal characteristic of the South African political and socio-economic landscape even today. As a result of the education policies under the apartheid regime the knowledge imparted to blacks was of inferior quality as it was intended to prepare blacks for domestic work and manual labour. The allocation of resources was skewed with the government allocating the least resources to the largest population group, blacks, while the smallest population group, whites, received the most resources and the best facilities. This schism in resource allocation created a chasm in terms of the qualifications, expertise and opportunities between blacks and whites (Kallaway, 2002). Furthermore, this scenario gave the white minority supremacy over blacks in South Africa with the white minority oppressing the majority of the country's population. It may be said that this situation was influenced by the provision of low quality education, termed Bantu Education, which portrayed blacks as inferior citizens. This posed an immense challenge to the new government in 1994, as it was the responsibility of that government to provide education in post-apartheid South Africa.

It is important to emphasise that the South African literature prior to 1994 refers to the IPs in South Africa as blacks and not as indigenous people. Therefore, the term "blacks" has been the adopted in this study and, where the discussion relates to IKS in South Africa, the term "indigenous people" is used. Engelhart (1972, p. 455) argued persuasively that in ethnographic case study research with historical educational research characteristics, the researcher should have an interest in, and knowledge of, not only his/her specific topic but also the general history of education. It is for this reason that a brief overview of the education system in South Africa is provided below with particular attention being paid to pre-apartheid, apartheid and post-apartheid segregation and desegregation. It was deemed essential to present the South African historical landscape in terms of the perspective of the two colonial periods, namely, British colonialism with its policy of Anglicisation in 1832, and Afrikaner colonialism with its apartheid policy.

As a concept, apartheid has its basis in the concept of dominance of the white minority and which has been described by Simson (1974) as fascism. Its introduction into South Africa as a policy of the National Party(NP) government permeated the entire constitution, legislative system and almost every other aspect of life and affected the treatment accorded to various sections of the country's population (Tobias, 1961, p. 1). Assimilation as conceived in South Africa can be said to have been psychological from its inception in terms of the practice of separating blacks, whites,

coloureds and Indians. This practice created a feeling of superiority in the white minority who were so convinced of their superiority that they treated the other race groups with utter disdain, relegating them to the lowest strata of society (Magubane, 2007; Van Wyk, 2003).

The question arises as to whether assimilation education in South Africa also manifests in residential schools, which were intended for white people. Black people were forcibly removed from these areas and their lands and resources seized. Prior to 1880, education was provided sparingly and unevenly for the children of the settlers. In the more densely populated farming areas there were private schools as well as a few small boarding schools. These schools were often inferior, run by people with no formal education and focused primarily on financial gain rather than pedagogical values (Hattersley, 1908). Children who were in boarding schools far from their parents were forced to obtain private tutors to further their education. The government provided education in the two main towns, namely, Durban and Pietermaritzburg as early as 1849, but there was no "coherent system" of education (Behr & Macmillan, 1971, p. 10).

2.8. Mission schools

The aim of British control in South Africa and in other countries was to ensure the expansion of the British Empire across the world. In South Africa, the British set up a system of government that was similar to that of British colonies in other parts of Africa. The British education system was colonial by nature. The British sought to use education as a way of spreading their language and traditions in the colonies and also as a means of social control (Christie, 1988, p. 16). English was made the official language in all the British colonies, and the church, government offices and schools were all Christianised. In the eastern regions of the Cape Colony, colleges of education, such as Lovedale and the University College of Fort Hare, were established under British auspices and St Matthews, Clarkebury and other mission schools were established throughout the Cape Colony to foster the British culture.

Various schools in South Africa were established in line with British tradition and educators were brought from Britain, especially at the inception of many of the mission schools. In the hidden curriculum of the British there was a need to educate the Africans so that they could take part in church activities. Mission schools were also introduced to spread the Western way of life among the Africans and to teach them certain work ethics (Christie, 1982, pp. 57–72). Labaree (1997) highlights that because education serves both private and public needs, the missionaries were providing Western education to the Africans for the public good but they also had many private interests that they were satisfying. Both the British government and the missionaries used education to attain their political goals. Sir George Grey, governor of the Cape in 1855, stated: "If we leave the natives beyond our border ignorant barbarians, they will remain a race of

troublesome marauders. We should try to make them a part of ourselves, with common faith and common interest, useful servants, consumers of our goods, contributors to our revenue.”

It is evident from the preceding quote that the British government saw an opportunity to disseminate both Christianity and civilisation through mission schools in order to prevent the blacks from waging war against the colonisers and to make them industrious. These strategies used to subjugate Africans in Africa and in South Africa in particular were spearheaded by the missionaries and subsequently cemented by the Afrikaners through apartheid from 1948.

2.9 Afrikaner National Education

Placing the education of the natives in the hands of the missionaries, who were encouraged by the white South Africans to Christianise the natives and advance them culturally, broadened the gap between equality and segregation even further. However, in accordance with these principles of segregation, the teaching and education of the natives had to be grounded in the life and worldview of the whites (Kruger, 1995, p. 202).

According to Kallaway (1988, p. 245), the introduction of apartheid education and indoctrination of both blacks and whites was done to conceal the real reason for the educational programme. In the veld schools the white boys were taught the importance of protecting their land from people such as the blacks and communists. In addition, these schools increased the white South Africans’ feeling of superiority over the Africans.

The scenario discussed above posed a challenge to the new government of South Africa after apartheid to prioritise the transformation of education in such a way that the so-called “pillars of apartheid education”, namely, issues of equality and segregation; the superior worldview of the whites; education for domesticity for blacks and the land question, could be addressed in a robust manner.

2.10 Bantu Education

The Bantu Education Act, 1953 (Act No. 47 of 1953; later renamed the Black Education Act, 1953) was a segregation law passed in South Africa that legalised several aspects of the apartheid system. Its major provision involved enforcing racially separated educational facilities. On 7 June 1954, the Minister of Native Affairs, H. F. Verwoerd, justified the introduction of the system of Bantu Education by asserting that:

The Bantu must be guided to serve his own community in all respects. There is no place for him in the European community above the level of certain forms of labour. Within his own community, however, all doors are open ... Until now he has been subjected to a school system, which drew him away from his own community and misled him by showing him the green pastures of European society in which he was not allowed to graze (Christie & Collins, 2006, p. 68).

Verwoerd's assertion above clearly indicates that the Bantu Education ideology of racial separation was to ensure that both the day schools and the boarding schools for blacks were to be removed from the urban environment and situated in the native reserves under the "guise of giving the Bantu complete expression to perform their real cultural services and to serve their own community in all respects" (Strickland, 2012). This idea of Verwoerd constituted blatant racial exclusion in education under the pretext that the blacks were being given "freedom to exercise their cultural rights in their homelands" (Horrel, 1968, p. 136; Seroto, 2012, p. 70). This "window dressing" statement under the guise of giving the Bantu complete expression to perform their real cultural services and to serve their own communities in all respects represented the Afrikaners' racial exclusion strategy of using education as a means to isolate blacks from the broader socio-economic stream of life.

It is clear from the discussion above on Bantu Education and its exclusionary policies that there would be high expectations that the post-apartheid government in South Africa would strip the education system of all of apartheid's fundamental discriminatory and racial exclusionary practices that had "dehumanised" the IPs by divesting them of their knowledge systems, land and cultural values. The question thus arises as to how the new government in South Africa after 1994 reconciled all the divisions that were entrenched in society using education as a hegemonic tool.

In my personal reflections in the introductory chapter, I highlighted that my motivation for embarking on my study with SARCHI-DE was one of their immersion concepts of transformation by enlargement. This in my view is an alternative concept that widens the scope of the concepts related to the construction of knowledge, especially in situations where scientific knowledge has marginalised the contributions of other groups of people on the basis of dismissing their knowledge as not being sufficiently "scientific" to be classified as knowledge. Transformation by enlargement talks to issues of knowledge that consider humanity in its totality in solving the problems that have beset the world.

2.11 Residential Schools

The residential school phenomenon refers to the forcible removal of children from their homes in order to place them in missionary administered schools. In Canada, the curricula of these schools aimed at preparing children from the age of seven to fifteen years for domestic labour and farming (Battiste, 2013, pp. 55–57). Residential schooling was mainly intended to root out and destroy indigenous knowledge, languages and relationships with the natural family, aiming ultimately at destroying the children's self-esteem, self-concept and healthy relationships with each other and their families and replace all these with Eurocentric values, identities and beliefs.

In Canada, the aim of residential schools has been viewed as tantamount to the “genocide of the indigenous people”, as was indicated in a report on the aim of residential schools, which showed that they were intended to destroy the remaining Indian nations in stages and thereby secure final European control over their lands and resources (The Truth Commission into Genocide in Canada, Part Two, 2001, p.55). This argument about issues surrounding assimilation in residential schools highlights the contested nature of Western schooling. In addition, religion is portrayed as being “innocent” as it was claimed it was. In most cases this claim is still being made. However, the nature and scope of this study was too limited to engage the unique issue of religion in residential schools; it is a focus area on its own which will acquire its own time and space. The question arises as to whether the nature of the residential schools in the other countries under discussion, namely, Australia and Aotearoa New Zealand, was the same as that of the residential schools in Canada.

2.11.1 Residential Schools in Australia

In Australia, education was offered primarily under the auspices of religious organisations until the 1830s when the Aboriginal Acts was passed, seeking to regulate the lives of the aboriginal Australian people to the benefit of the white settlers. There are some painful similarities between education in Australia and that in Canada with regard to conversion to Christianity and assimilation until the 1860s (McConnochie & Russel, 1982, cited in Prochner, 2004). At this point, policies in Australia shifted toward the protection and segregation of the Aborigines in Australia. These policies were supported by the so-called common scientific and popular belief that the Aborigines were a dying race (Hudec, 2011, p. 5; Prochner, 2004). Once the Aborigine population had showed that it was not a “dying race”, the government shifted the emphasis from protection to assimilation in the 1930s. According to Hudec (2011, p. 5), the number of Australians of mixed descent, called half-castes, began to increase (these were children born of especially white fathers and Aboriginal mothers). The whole point of assimilating these children (half-castes) was to protect and assimilate them into white society (Hudec, 2011, p. 5).

Australia was founded as a penal colony – a dumping ground for English prisoners. Australia's harsh treatment of its Aboriginal population paralleled the English treatment of prisoners. As had happened in the USA, frontier⁵ wars broke out as the settlers moved onto Aboriginal lands, leading to violent tendencies on the part of the settlers and genocidal activities. In 1865 in Queensland, a legal clause was introduced that allowed the forcible removal of Aboriginal children from their families on racial grounds. These removals, which were designed to assimilate Aboriginal children, continued into the 1970s and resulted in a concept that came to be known as the "stolen generations". This concept of assimilation was related to the idea of containing an "indigenous threat" (Robinson & Paten, 2008).

The said indigenous threat concept became a guiding principle for the "stolen generation" policies of the nineteenth and twentieth centuries. Programmes for Aboriginal children were instituted in 1960. These programmes were led by white professionals and based on the American compensatory model (Nurcombe, 1976; Prochner, 2004) for assimilation into Euro-Australian society. As in Canada, these acts of removing children from their families may be perceived as genocidal although the strategies used by the two countries were different. This assertion is illustrated by referring to a comparison of Australia and Canada in respect to the aims, objectives and strategies of their residential schools and the outcomes of these forced removals (see Table 1).

Table 1: A comparison of Canada's Residential Schools and Australia's Stolen Generation's comparison

Category	Australia's Stolen Generations	Canada's Residential Schools
Main objective/ goal of the government	To assimilate or breed out indigenous people by removing children who were not of full blood from their families	Forced assimilation of the aboriginal people into white/colonial society

⁵A paper read at the meeting of the American Historical Association in Chicago, July 12, 1893. It first appeared in the Proceedings of the State Historical Society of Wisconsin, December 14, 1893, with the following note: "The foundation of this paper is my article entitled 'Problems in American History,' which appeared in The Ægis, a publication of the students of the University of Wisconsin, November 4, 1892 ... It is gratifying to find that Professor Woodrow Wilson —whose volume on 'Division and Reunion' in the Epochs of American History Series, has an appreciative estimate of the importance of the West as a factor in American history – accepts some of the views set forth in the papers above mentioned, and enhances their value by his lucid and suggestive treatment of them in his article in The Forum, December, 1893, reviewing Goldwin Smith's 'History of the United States.'" The present text is that of the Report of the American Historical Association for 1893, 199–227. It was printed with additions in the Fifth Year Book of the National Herbart Society, and in various other publications.

The government's rationale behind the creation of these policies/beliefs	The children to be raised as white and taught to reject their aboriginality (they were seen as inferior)	To create a labour force by teaching domestic and industrial skills in the residential school
After the children had been forcibly removed from their homes, where did they go?	Raised in foster homes, adopted by white families or placed in institutions or mission dormitories	Many church organisations enlisted church-run schools far from home in a foreign institutionalised setting, sometimes for years at a time
Describe the children's experiences	<p>Extremely traumatic being taken away from their loved ones</p> <p>Denied their culture, language and love</p> <p>Suffered physical, emotional and sexual abuse</p> <p>Poor education, trained as servants, denied earnings</p> <p>Taught to look and act as white and look down upon their own people (aboriginals)</p> <p>Often told their parents were dead and provided with forged death certificates</p>	<p>Stripped of all aboriginal culture – haircut, deloused, given a number, forced to speak English, not permitted to practise their cultural ways/beliefs, not allowed to interact with siblings or opposite sex</p> <p>Wear European clothing and view the world through the lens of European values and beliefs</p> <p>Many students were mentally, physically and sexually abused while all the students were spiritually/culturally abused</p> <p>Denied love of family and community</p>
Impact on children, families and communities	<p>Highly traumatic experiences for children, families and communities</p> <p>Cultural, spiritual and family ties were broken</p>	Traumatic effects on the children, families and communities and for generations

		Loss of cultural knowledge
Important reports Outcomes of the reports	<p>“Bringing them Home” report launched a campaign to demand an apology from the government</p> <p>In 1997, the prime minister refused to apologise despite the fact that he had been in office for part of the assimilation policy timeframe</p> <p>Activists urged that the history be told and addressed so that reconciliation could begin</p>	

Table 1: Canada's Residential Schools and Australia's Stolen Generation's Comparison Chart

In 1997, a national inquiry in Australia into the “Separation of Aboriginal and Torres Strait Islander Children from their Families” issued its report entitled *Bringing Them Home*. This report documented the suffering of Aboriginal children removed without parental consent from their homes, a practice that, as reflected in the findings of the “Bringing Them Home Community Guide” of 1997, had continued into the early 1970s. The key findings showed that 10 to 33% of Aboriginal children had been removed from their families between 1910 and 1970. As in the case of Canada’s history of residential schools, Australia’s colonial legacy of the “stolen generations” became the focal point of reconciliation for Australia (Bringing them home report, 1997) and led to a formal apology by the Australian government in May 1997 – an event which came to be known as “Sorry day” in Australian history and which was followed by the release of the Social Justice Report in 26 May 1997 (see Gardiner-Garden, 1999; [http://www. Creative Spirits. Info](http://www.CreativeSpirits.info) and Gardiner-Garden, 2007, on the 1967 Referendum.

2.11.2 IMPLICATIONS OF RESIDENTIAL SCHOOLS

Residential schools were clearly the instruments of assimilation in either a direct or an indirect form. In the case of Canada and Australia, assimilation took on a direct form because the children were forcibly removed from their parents and placed in mission schools, which were funded by the colonial governments to advance their agenda of removing any traces of the children’s indigenous cultures, heritage and languages by imposing the language of the colonising power. In Canada, Australia and Aotearoa New Zealand this was the English language. Residential schools may further be viewed as the master plans of the colonisers to brain wash the indigenous

people and force them to surrender their lands and all their resources at the “stroke of a pen” (attaching signature under duress). A comparison of the legacies of the residential schools in these countries is outlined succinctly on the following site: prezi.com/gevtepvciint/?utm_campaign=share&utm_medium=copy&rc=ex0share. The comparison of the implications of residential schools (see Table 2.1) highlights the fact that the provision of education by the colonial powers was not a genuine exercise of civilisation but, instead, it generally represented blatant acts of genocide like it was the case in Aotearoa New Zealand.

2.11.3. Residential Schools in Aotearoa New Zealand

Residential schools in Aotearoa New Zealand were established on a different basis to that used in the establishment of such schools in Canada and New Zealand. The removal of the children from their parents or communities was “subtle” in that the colonial state extended an olive branch in the form of block grants to the churches to administer the missionary schools which provided education to Maori learners. This was done by encouraging the establishment of industrial boarding schools under missionaries, as reflected in the Aboriginal Cultural Competence Framework (2008, p. 14), aimed at civilising the Maori children and weaning them away from their primitive cultures. The subsidisation of the mission schools was conditional – the missionaries had to provide instruction in English and not in Maori as had been the case in missionary education before 1847 (Archibald, 2006, p. 29).

This situation continued until 1867 when an extension to the Education Act of 1877 offered the village schools to the Maori communities. In return for providing land, the community was given a school, a teacher and books. Agreements were reached with the religious groups, mainly Catholic, who then received the land in exchange for building and running the community schools. Increased urbanisation led to many Maori children attending city schools. This resulted in their history, language and culture being either ignored or suppressed with the children being expected to become part of a modern, mainstream society. As a counter response to the ensuing demise of the Maori history, language and culture, the *Kura Kaupapa* Maori schools sprang up in the 1990s across New Zealand. These school’s private day or boarding schools are run by and for Maoris and offer Maori children a total immersion experience. In May 2000 a government press release announced that subsidy criteria would be changed to permit the funding of *Kura Kaupapa* Maori boarding schools. “Thirty-two *Kura Kappa* Maori boarding schools, *Wharekura* and other schools that use the Maori language as the primary source of instruction now qualify for funding as part of the government’s Gateway Programme for Schools” (Horomia, 2003).

2.12 Transformation by Enlargement

Transformation by enlargement in this context may be cross-referenced to the concept of Richards (2011) of TbE which argues about making meaning of the transforming disciplines by humanising them. This would be the penultimate step in the transformation of the academy. Universities, as centres of excellence, produce knowledge from the perspective that erases the humanisation of the curriculum by clinging unrelentingly to the knowledge disciplines designed in Europe in the 19th century with the aim of modernising the natives, at least in the case of Africa.

2.12.1 Transformation by Enlargement towards the Integration of IKS into the Curriculum

Transformation has become a buzzword in the contemporary discourse on education in South Africa, especially after 1994, which became a period of anticipated change in all the landscapes of society. In the education system, this was a period of numerous reviews of the curriculum, which were aimed at producing implicit curricula to replace the apartheid education curricula. These reviews could have been anticipated in the attempt to reshape the curricula in such a way that they would address the principle of education as a basic right, as outlined in section 29(2) of the Constitution of the Republic of South Africa, 1996, which was “closed” (not welcoming) to the diverse cultures in South Africa. It is for this reason that the concept of TbE became an ideal conceptual framework for a paradigm shift in the curriculum in order to accommodate the divergent cultures that indigenous learners, indigenous knowledge holders and teachers bring to the classroom. The purpose of this is to conscientise the teaching and learning environment to the indigenous knowledge to be integrated into the curriculum for basic education.

Furthermore, TbE may suggest taking a broader view of knowledge in education as opposed to the limited view that has been seen to be acquired to meet the market-driven ideals of economic growth in the process of modernisation. The enlargement view in this case would mean including modernity’s other, which is the human capacity element. TbE, as viewed by Odora Hoppers and Richards (2011), may be conceived as injecting a fast pace into the transformation of the education system in South Africa by extending its paradigms to include IKS. TbE goes to the heart of transforming systems of education in a way that may cause the thinking in the centres of excellence to be rethought in an attempt to solve the intractable problems facing the world today. The rethinking in TbE, as viewed by Odora Hoppers and Richards (2011, p. 36), has the potential to turn the situation of modernity’s other around to that extent that the global economy will be run by human beings rather than the global economy running us.

This argument shifts the focus from thinking of progress as a rigid rule of markets and bureaucracies, to considering the multiple ways that sustained humanity before industrialisation.

It is on the basis of this shift in our thinking that basic education in South Africa in particular could be transformed to include philosophies such as Afrikology which, through transdisciplinarity, may result in the African perspectives such as Ubuntu becoming focus areas in the envisaged curriculum for basic education. The enlarged view in TbE epitomises the role of knowledge construction as a basis for a pragmatic consensus on the transformation of the curriculum in terms of embracing the inclusiveness of other knowledge systems. Consensus, as highlighted in TbE, may create space for opening up the curriculum to diverse cultures, each with their metaphysics, which is part of the Ubuntu philosophy, as well as their nature of being very much at the centre of the principle of reconciliation in conflict situations. This relationship between Ubuntu and metaphysics was highlighted in the speech of the Chairperson of the South African Truth and Reconciliation Commission (TRC), Desmond Tutu.

When speaking about the foundation and justification for the TRC, among other things, he stated: “When I dehumanise you I inexorably dehumanise myself” (Peat, 2013, pp. 238–248). This trend in thinking in relation to the reality of life is a concept that is rooted in prehistoric times in Africa and based on a holistic worldview which has been preserved by the fact that metaphysics is concerned with the principles of reality which are beyond any particular science or modern Western philosophy. These are profound issues in the African cosmologies and African ontologies that assist in understanding the African world of being that can be explored only in an enlarged space that is able to accommodate a combination of metaphysics, physics and philosophy in a hermeneutic, transdisciplinary and Afrikological way (Peat, 2013).

The focus of this chapter was the conceptual and theoretical framework of the concepts that constitute the basis for the phenomenon under study, namely, the integration of IKS into the curriculum for basic education. The subject of inquiry represents an attempt to respond to some of the questions directed at the chair, namely, SARChI-DE:

- What type of transformative actions must be instituted to enable both restorative action and sustainable human development to occur in Africa and elsewhere?
- How many key areas of disciplinary knowledge production (such as science, economics, education and law) can be reconstituted in order to bring about just and human-centred development on the African continent?

In response to the questions directed at the SARChI-DE, development education reframes human development, which has been removed by modernity, and reframes systems transformation within a paradigm of restorative action and cognitive justice that can bring back parity to an education system that has been structured on inequality.

As highlighted in the introduction to this chapter, this study is based on the SARChI's transformation concept of TbE, which forms the basis for exploring the construction of new emerging concepts that may be identified in the proposal of a model for the integration of IKS into the curriculum for basic education in South Africa. This may suggest that this study is on track with regard to one of the SARChI-DE's exploratory areas – Indigenous knowledge systems and innovations: Conditions for their integration. Their integration, in the context of this study, would refer to integration of IKS into the curriculum. This will become a reality only if the notion of IK, as part of the subaltern and heterogeneous forms of knowledge that have been marginalised because of cognitive imperialism, is deconstructed by means of the new concept of cognitive justice.

CHAPTER 3

CASE OF THEORIES THAT INFORMED EDUCATION IN SOUTH AFRICA BEFORE 1994 AND BEYOND AND INTERNATIONAL PERSPECTIVES OF BASIC EDUCATION

3. INTRODUCTION

This chapter is divided into two parts. Part one focuses on the educational landscape in South Africa before the democratic dispensation in 1994 while part two focuses on international perspectives of basic education in various and how it is conceived in South Africa and Canada.

Part one's focus is on the theories that underpinned the education system in South Africa prior to 1994, namely, racial segregation. The period of segregation in education in South Africa played a major role in the culmination of the political struggle in the education arena in 1976 that marked a watershed in the politics of education in South Africa. The period following this watershed was characterised by flux between the 1980s and the early 1990 and a period of no formal education until 1994 when the Government of National Unity was declared with its much anticipated alternative education system for blacks in the country.

PART 1

3.1 Educational Landscape in South Africa before 1994

Before 1994 South Africa's education system was underpinned by theories of racial segregation which were effected in the education system through the apartheid education system which formulated an exclusionary education policy for Bantu education. It may, thus, be deduced that the architects of apartheid intended to reproduce the conditions of apartheid capitalism in a way that would be a super structural manipulation in order to support, promote, consolidate and reproduce white supremacy and dominance in South Africa. This scenario was echoed by Christie and Collins (1982, pp.59–75) by stating that, "apartheid schooling was designed and motivated in such a way so as to ensure that white South Africans are schooled in order to take on managerial positions in society and to be dominant in economic, political and social arenas of South African society, while black South Africans were being schooled for domesticity". This context brings reproductive theory to the fore in the argument on the structure of apartheid education and which was described by Christie and Collins (1982, p. 79) as follows: "the central continuing feature remains, namely, that schooling for blacks in South Africa is in the main purpose of reproducing

a certain kind of labour, as required by the particular form taken by the accumulation process at a particular form”.

The reproduction theory, as introduced in this argument, focuses on the issue of the role of social class relations in production, which cannot be divorced from some level of exploitation with the ruling class living at the expense of the cheap labour from the lower class. Christie and Collins (1982), Carrim, N (2007, pp.173-174) unpack the issue of reproduction in apartheid schooling by arguing that the unpack the issue of reproduction by showing the engineering of apartheid in the school curriculum was such that schools played a critical role in filling a notable void in preparing the labour force for the life awaiting them in the future. This notion may be cross-referenced to Verwoerd’s speech, as cited in chapter 2, on the assumption of the apartheid government about the fate of black learners in South Africa.

Furthermore, Christie and Collins (1982) highlight the fact that segregation in education in South Africa did not, in fact, begin with the introduction of the Bantu Education Act in 1953 as education for blacks and whites had been structured along unequal lines long before 1948. According to Christie and Collins(1982), segregation schooling was already in place in the 1930s and 1940s as an attempt to reproduce the racial inequality propagated by the mission schools.⁶ This suggests segregation in the education system in South Africa preceded apartheid and it was a racial issue that had been introduced by missionaries who happened to be white rather than the apartheid government ideology.

3.1.1 Reproductive theories in the South African education system before 1994

Repressive measures in South Africa prior to 1994 had taken the form of reserves and pass laws that were tools used to entrench reproduction of the subordination of blacks to whites. Schools had played a critical role as ideological tools to reproduce social relations Molteno, (1980, p.17). Schools functioned as the sites of the repressive measures which were in place by ensuring that the black learners were concentrated at the lower levels of schooling so as to ensure that the education they received would be commensurate with their positions of servitude. With regard to the curriculum, the skills taught were directed at instruction in basic communication, literacy and numeracy with the emphasis of knowledge of one of the “so-called” official languages, English or Afrikaans as the languages of the employers. This segregationist structure of apartheid education

⁶P. Christie and C. Collins, Bantu Education: Apartheid ideology and labour reproduction in P. Kallaway, Apartheid and education, 1984. P. 163

P. Christie and C. Collins, Bantu Education: Apartheid ideology and labour reproduction in P. Kallaway, Apartheid and education, 1984, p.165

was designed to meet the general reproductive needs of capital in the country. Despite the controversy of the average white South African view of education for blacks, it can be said to be dubious in its objective. The dubious attitude of the average white South African towards the provision of schooling for blacks, as highlighted in the report by the Welsh Commission in 1936, was revealed by the evidence before the Committee that it appeared that opposition to educating the native on the grounds that:

(a) It makes him/her lazy and unfit for manual work.

(b) It makes him/her “cheeky” and less docile as a servant.

(c) It estranges him/her from his/her people and often resulting in him/her despising his/her own culture Rose & Tunmer, (1975, p. 23).

The segregationist comments cited above indicate the type of education which whites regarded as suitable for blacks, namely, a reproductive type of education system that produced a dormant person who is ill-equipped to question the rules of the knowledge systems game. This statement is in line with my personal reflection at the beginning of this study in which I sketched a brief background of my schooling and the encounters I had when seeking a job that would enable me to build on my studies, for example, the comments made by some white people such as “Jy is te veel geleerd, Sy lyk nukkerig” (translated as ‘you are too much educated/certificated and she seems to be moody’). These sentiments expressed the racial connotations that white South African attributed to the so-called educated blacks, thus implying that, for a black person to gain access to the job market, the person had to be less educated so that the person could be exploited for questioning the treatment meted out to him/her. This highlights the urgent need for the new government to tackle the issue of racism in the country and the low quality black education without delay.

This nature of education dominated by social reproductive theories and racial segregation theories has been encapsulated by Christie and Collins (1982, p.65) in their assertion that the reproductive and racial theories in the education system result in an ideological orientation which is geared towards appropriate work attitudes such as diligence, punctuality, the operation of the colour-caste system and the subordinate position of blacks in the social relations of dominance and subordination in South Africa.

The Bantu Education policies were underpinned by the theories of social reproduction as espoused in Bourdieu’s theory of social reproduction, cultural capital and habitus which embodies the parental codes and practices capable of securing a return to their holders according to

Bourdieu's term *habitus*. Habitus constitutes an important form of cultural inheritance and it reflects class position or the actors' location in a variety of fields and, in Bourdieu and Passeron's (1977, pp. 204–205) view, it is geared towards the structures of dominance. Where knowledge and possession of the said cultural capital, termed “highbrow” culture by Bourdieu (1977) are concerned, the issue of the institutionalisation and legitimisation of certain cultures is raised together with economic, social and human capitals, which, as cultural capitals, reproduce social inequalities.

The reproduction of social inequalities in education in South Africa introduced the issue of meritocracy based on race in terms of which children of the white race were exposed to elite culture at home, thus giving them an advantage in the schools. This beneficial culture was recognised and rewarded by teachers who, in the process, excluded the children of the working class minorities who lacked similar cultural capital. Bourdieu (1974; 1977, p. 32) interpreted this type of action as ‘symbolic violence’ which in turn forces “other” children into a competitive mechanism that rewards the dominant cultural capital only. In the context of this study the question then arises as to which theories would be able to liberate black education of the blacks from these former apartheid education reproductive theories which were geared towards capital reproduction only.

After 1994 it was evident that a new approach to research on the education system in South Africa was required aimed at developing an education system that would legitimise the transformation of education, from basic to higher education. The legitimisation of transformation of education would be a response to the 1996 call on redressing the imbalances of the past, which had permeated the entire education system in South Africa. Both the DST and National Research Foundation (NRF) responded to the call by government to create instruments that would bring new research leadership capacity into the public universities. The instruments established included the South African Chairs Initiative (SARChI) in 2006.

These chairs were designed to attract and retain excellence in research and innovation at public universities in South Africa with a long-term investment of fifteen years. 150 research chairs were awarded to 21 public universities. SARChI in Development Education (SARChI-DE), headed by Professor Catherine Odora Hoppers, was one of these 21 chairs. SARChI-DE's mission was and is to introduce a new pedagogy into academic research and citizenship education with human development as the goal. In its exploration through research, SARChI-DE seeks answers to some of the most challenging and intriguing questions about development, knowledge production and science. The questions that SARChI-DE poses are contextualised within the context of human development and systems transformation within a paradigm of restorative action and cognitive

justice. Through the concept of transdisciplinarity, SARChI-DE has introduced four linked and transdisciplinary focal areas for theoretical, applied and strategic research explorations.

In an attempt to narrow the scope of this study, the focus on the study was restricted to one of the research areas of this chair, that is, “Indigenous Knowledge Systems and Innovations: The Conditions for their integration; Indigenous Knowledge Systems and Innovations. This chair sees indigenous knowledge as part of the subaltern and heterogeneous forms of knowledge that had no place in the fields of knowledge that grew in a compact with colonialism and science. Theoretically, indigenous knowledge systems make it possible to explore the meanings and theories of death, obsolescence, resilience, survival, globalisation, freedom and healing. In addition, Indigenous knowledge systems enable us to revisit concepts such as property, poverty, and the ‘commons’ as well as the systems that govern these concepts. By taking IKS to this level, the chair contemplates the possibilities for alternative globalisation, alternative regimes of intellectual property and alternative times.

This study was conducted within the ambit of SARChI-DE’s projects on the transformation of the academy through the transformation of systems. The study focused on transforming action in the curriculum. The title of the study, “Integration of IKS into the curriculum for basic education”, was within the verbal context of the transformation of the curriculum at basic education level in South Africa.

3.2. SARChI’s Development in emerging concepts in education

This chapter first discussed the theories of racial segregation that underpinned the education system in South Africa before 1994. As highlighted earlier, South African society expected the new government, which replaced the apartheid government to redress the imbalances of the past in the education system. However, the reality is that any form of the redress of the imbalances of the past could not be effective under the same paradigm of education, which included colonial and/or apartheid education concepts. In other words, there had to be a shift of paradigm in terms of adopting different approach to the way in which knowledge has been produced. SARChI-DE was well positioned strategically as an instrument that would take an antithesis approach to contextualising knowledge production issues in relation to the African worldview.

It is clear from the above that SARChI’s strategy in development education had to be transformative as opposed to the approach, which had characterised the first period after colonisation in Africa and which is known as first level indigenisation and whereby intellectuals in Africa conceded to the colonial education extension in Africa. In this regard Mazrui, in Mkandawire (2001) in Odora Hoppers’ Centre for Education Policy Development(CEPD) Occasional Papers No 5 (2004), argued from the context of the African university (where knowledge is produced) that

- the African university was conceived of
- as a transmission belt for Western high culture
- rather than as an institution to contextualise standards, and
- set parameters of excellence based on the needs of African society and the African people.

This argument highlights the change of thinking in the minds and hearts of intellectuals in Africa and the African Diaspora about the conception of knowledge that is grounded in local conditions, in this case, conditions on the African continent. It is for these reasons that SARChI-DE decided to base the new discourses on alternative research into education for Africa and South Africa, in particular, on transformative paradigms that relate to requirement of the local conditions in the countries in question. Thus, SARChI-DE conceived of concepts that would challenge the consequences of colonialism for IKS; that is, the cognitive imperialism.

3.2.1 Cognitive justice

The starting point for SARChI-DE was at the cognitive level where science has violated other forms of knowing – other forms of knowledge such as IKS would be returned to life and restored to humanity without duress or, as mentioned earlier on in this study, with the freedom to name the development in their own terms. In addition, the restoration to life of other forms of knowledge would have to be conducted in a just manner as this process is a human rights issue. This, in fact, is the reason why SARChI-DE found it appropriate to use the concept of cognitive justice as opposed to the concept of cognitive imperialism, which had subjugated the right of different forms of knowledge to survive creatively and sustainably. Cognitive justice in this context should be understood in the following two different ways, namely: as respect for the knowledge system but also as an understanding for life forms, livelihoods and a way of life. Furthermore, in Visvanathan's (2000) view, cognitive justice is a fraternity at the epistemological and ontological level that the university requires, and it is in this search for cognitive justice as a fraternal act that the future university will be located. The fraternity in this case may suggest that the transformation of the curriculum should not imply a removal of the theory of the West in knowledge production but, instead, that a theory of the West must be developed within the confines of an alternative vision of the world, namely, the indigenous vision of the world.

3.2.2 Second level indigenisation

Second level indigenisation has

- enabled the grounding of the very process and agenda for **learning and research in local conditions**; and
- in the 21st century, some African universities are finally realising that they could have started with “**second level indigenisation**” (SLI).
- **First level indigenisation (FLI)** deals with the regulatory rules, accepting the plot and leaving the frame intact.
- **Second level indigenisation** questions the **rules of the game**.
- Second level indigenisation into **the constitutive rules** that make the **paradigms of practice** that I call “**the pin codes**” (Odora Hoppers, 2009, 2013).

3.2.3 African Perspective as a “new constitutive rule”

An African perspective implies more than just acknowledging that a particular person is African by descent, which, although it may be a starting point, on its own is not enough. Instead, an African perspective should entail delineating a distinctive conceptual and analytical lens and demarcating a mental position or plane of projection from which a wide variety of issues are viewed, reviewed or judged, or propositions for new visions or directions are made. Thus, when one talks of looking at the world from the perspective of a woman, or a prisoner, or a king, it is expected that a distinctive lens will emerge through which the same set of facts, once revisited via this new lens, will produce new dimensions or propositions for action that were not possible through the original lens.

In order to do this, I refer to Ashis Nandy's statement in his contribution to the fascinating collection of reflections entitled "What Does It Mean to be Human?" (Franck, Roze, & Connolly, 2000). In that seminal article, Nandy (2000) pointed out that every age is characterised by a prototypical violence. In addition, every age also has a cut-off point at which the self-awareness of the age catches up with the organising principle of the age when, for the first time, the shared public consciousness begins to own up or rediscover itself. If we begin from this standpoint, we start to recognise the importance of acknowledging that knowledge rests primarily in people rather than in ICTs, databases or services and, thus, that for Africa the challenge has to be how to build on the local knowledge that exists in its people as a concomitant to working with global knowledge and information. We also begin to contemplate what a knowledge society with equity would look like. As we survey the wreckage and note the unprecedented evacuation of billions of people from

the arena of substantive innovation essential to their existence, we need to turn with force to the task of redefining key concepts such as *innovation*, its link with the goals of building sustainable societies and cognitive justice as key to the attainment of long-term, and sustainable, development (Odora Hoppers, 2002,2009). Once we begin to see innovations differently, innovation then goes beyond the formal systems of innovation, as found in universities and industrial research and development laboratories, to innovations from below by which according to Odora (2017) in emphasising (Mashelkar R.A. 2002)'s view, is meant to take into account the full participation of all producers of knowledge, including those in the informal settings of rural areas.

3.2.4 Transdisciplinarity: A case for knowledge integration

- Making transdisciplinarity in knowledge production a focus.

The disciplinary knowledge spectrums (law, economics, education and science) are transformed by enlargement. The context in this case is of “taking the research out of the university and placing it where knowledge’s are produced”, that is in local communities for raising awareness of lifelong learning. Transdisciplinarity, as explained in chapter two, relates to the interaction between and among knowledge systems (KS) – it is a move away from the view of conceiving knowledge in silos but, instead, conceiving it in an integrated manner whereby each KS is independent and unique in its meaning but also adds value to other knowledge systems by means of integration.

Transdisciplinarity in the case of the development of the African continent would be in the context of the following issues as outlined in Odora Hoppers’ (2017) plea for universities to develop research and training areas that are global in outlook but relevant to Africa as a continent.

As a critical conscious plea, Odora Hoppers (2017) suggested the following:

- We ought to significantly take a look at, through research, the legacy of Africa's relation with worldwide structures. Introduce interdisciplinary focal areas for theoretical, implemented, and strategic search explorations, for example, policy research, peace studies together with peace training, gaining lifelong knowledge and citizenship schooling, indigenous understanding and the integration of knowledge systems, technological know-how and society with a focus on the link between tradition and science education in Africa, and gender from an African worldview.
- We should have interaction significantly with problems of democracy, values, human rights, and human wrongs and the area of duty of various cultures, inclusive of peace building from an African perspective, by means of drawing on, and exposing the researchers to concrete cases in Africa, the global South, and the world over, develop

within the graduates the capability to traverse theoretically and methodologically those various fields of human endeavour.

- Odora Hoppers's humble appeal above reflects on SARCHI-DE's agenda of an African consciousness with regard to the issues that are plaguing our continent but which are also being global in outlook because the problems that Africa is facing today are the results of the colonial "implants" from the North that cannot be ignored and which, instead, must be confronted head-on.

Interdisciplinary has a value additive nature, which may be realised when research is integrated with teaching, engagement, and inter-disciplinary dialogue, which broadens both the actors and the audiences of education. The large variety of disciplines and professions, coverage-makers (policy designers) and the public may use education areas to co-create knowledge, and debate and pursue both and cognitive claims in relation to that knowledge. Collaboration and co-introduction are difficult procedures that may, however, bring about good understanding of confrontation and conflict. The exclusive areas of education that are blanketed by using instructional freedom provide exceptionally secure, hospitable, and learning-orientated areas where the difficult problems of unsustainability may be confronted. At present, the special elements of educational warfare separated and traded off and, thus, cutting-edge structure for reward and recognition require reforms a way to work in a more complementary manner.

Research of 'the scholarship of discovery' must be valued on the subject of teaching, community engagement and interdisciplinary collaboration, keeping the sustainable development goals(SDGs) in view as a guiding framework. Of note about interdisciplinary is the fact that integrating research with teaching, engagement and inter-disciplinary dialogue broadens the actors and audiences of the centres of excellence where knowledge is produced. The broad range of disciplines and professions, policy-makers and the public may use the spaces of the said centres to co-create knowledge, and to debate and pursue material and cognitive claims in relation to that knowledge production in the 21st century.

PART 2

3.3 International Perspectives of Basic Education in Different Countries

Basic education has been declared as one of the key fundamental human right, by many of the UNO's world forums like the Jakarta Declaration's (2005). The fundamental principles of education as a basic human right has been epitomised by the UNESCO's constitution in this way:

The fundamental principles of non-discrimination and equality

Educational opportunities are of key importance to govern the

implementation of the right to education. (UNESCO 2010)

What stands out for me in the above cited principle in relation to this study is, among other things, that, the governments of the world that uphold the democratic constitutive rights, such as South Africa and Canada, among others, are obliged to finance basic education for all of their citizens and, any hindrance to this would be taken to constitute a gross violation of basic human rights. Equality of educational opportunities was highlighted in Article 4(a) of the United Nations Educational, Scientific and Cultural Organisation (UNESCO) Convention against Discrimination in Education (UCDE), UNESCO (1960) in terms of which states are required to "promote equality of opportunity and treatment in matters of education and, in particular, [t]o make primary education compulsory and free".

Basic education as the focus of this study falls within the category of the basic human rights which as cited in the UNESCO's 2010 constitution, is an obligatory condition for any government of the day. This would suggest that, the findings of this study should be regarded as a matter of prime consideration by the government of South Africa, in relation to the provision of financial resources to the DBE, to effect viable suggestions of a particular model from this study, towards the integration of IKS into the curriculum for basic education in South Africa.

3.3.1 Perspective of Education in Canada

This section discusses the manner in which basic education is viewed and understood in Canada and in other countries as points of references for this study. South Africa is also included in the discussion in order to determine how basic education is conceived in the South African context.

Basic education in Canada comprises kindergarten followed by Grades 1 to12. The school going age is 5/6 to16 to 18 years of age. In other words, basic education includes both primary and secondary schooling.

Basic education in Canada is perceived from a dual perspective since Canada is a bilingual country in which both English and French are the official languages. In Canada, basic education is defined within the framework of educating children for citizenship and includes both primary and secondary education (Sears, Clarke, & Hughes, 1998, cited in Deer, University of Manitoba 2010).

In view of the world's concern about sustainability the 2030 United Nations General Assembly (2015)'s agenda 4, poignantly referred as (SDG4),⁸ the education systems should be at the forefront of actualising this mandate on sustainability by means of the transformation agenda for human development in the 21st century. The attempts to integrate IKS into the curriculum, as deduced from the policies of and selected studies on Canada, and also Australia and Aotearoa New Zealand, appear to suggest a praxis of the integration of IKS into the curriculum in a way that does not limit the education systems to the indigenous assimilation approach of the former colonial education policies.

According to Battiste and Barman (1995), cited in Swayze, (2007, p. 10), the greatest challenge is to find a respectful way in which to compare Eurocentric and indigenous ways of knowing and include both in contemporary modern education. This, in turn, acknowledges that both Western and indigenous knowledge's are going to need each other in these critical times in which we all live and are in need of a sustainable future to save the world from further catastrophies. This view has become the basis for a model of a culturally responsive curriculum in Canada – see Figure 5, which presents an example of the Alaskan culturally responsive curriculum.

It is worth mentioning that the acknowledgement of the convergence between indigenous and Western knowledge is demonstrated practically in most regions in Canada whereby the elders have become part of the models of culturally responsive curricula. This is based on the fact, as highlighted by Swayze (2007, p. 11) that the elders have a socio-culturally grounded role in guiding, advising and supervising the younger generations based on both their “traditional” knowledge and their understanding of “modern” knowledge, Western Canadian Protocol for Collaboration in Basic Education, (2000). Furthermore, the involvement of the elders in curriculum development for sustainability in Canada is viewed in a very serious light and takes into consideration the views deliberated upon in United Nations A/RES/70/1 (Distr: General 21 October 2015)'s Resolution adopted by the General Assembly on 25 September 2015 [without reference to a Main Committee (A/70/L.1)] 70/1. Transforming our world: the 2030 [Agenda for sustainable Development, http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang].

Swayze (2007, p. 27) reflects on views such as those articulated above and notes that, when involving the elders in education planning, it is important that they should not be viewed as merely

decorative or symbolic. In other words, they must be acknowledged as leaders, deeply entrenched in educational foundations and as repositories of traditional knowledge and managers of Indigenous knowledge systems. They should be seen as authorities by their communities' stakeholders in developing culturally relevant science curricula (Aikenhead (2006); ANKN, (2004a); Inuit Subject Advisory Committee, (1996); Kawagley et al., (1998); McKinley, (1996); Riggs, (2005); Sutherland & Tays, (2004). The issue of the "tokenism" of the elders in the process of the integration of IKS into the curriculum stands out as a critical aspect which must not be ignored as it has been the case in countries such as South Africa as it could be one of the major causes of stalling the transformation process in the education system to ensure the inclusion of IPs.

3.3.2 Transformation by Enlargement (TbE) as a meta-theory

- As highlighted earlier in this chapter, SARChI-DE's objectives are transformative and project both the trajectories of the continent (Africa) and internal trajectories. The new tenets of knowledge developed by SARChI-DE are restorative for the purpose of both justice and human-centred development on the African continent. It is for this reason that the concept of transformation by enlargement emerges as a meta-theory that relates to the meta-capacity for systems level transformation, taking into consideration the fact that, it would not be possible for the education system in South Africa, in particular, to transform unless the apartheid education system as a whole is uprooted to make way for a new education system that transcends the limitations of the power that had subjected black learners to a myopic type of an education system. For this anticipated action to happen, the space for the shifting of the power dimension in knowledge production needs to be enlarged.

Transformation by enlargement in the case of this study is based on the SARChI's methodology which is directed at challenging modernity and the disciplines which it has created by confronting it with the knowledge it has omitted from the knowledge producing arenas. In echoing this call for creating theories that enlarge transformation, Odora Hoppers (2013) states that "African leaders and intellectuals must not take education like any sort of discipline. We must see our goal as moving beyond disciplines, beyond subjects, to connecting with life and life processes through deep reflection on content, methods, theoretical frameworks and paradigms. We must move to the life worlds, and we must make what we do into 'life statements' in shifting from acceding to the anomaly of today's enormous accumulation of knowledge that still fails to provide solutions to humanity's major problems. In the light of this, new methodologies that will relate to the problems encountered by humanity today need not only to be thought about in quantity but in quality, but also of what can bring about meaningful change to the world puzzled by crime, wars,

unemployment, climate change. This list of problems is by no means exhaustive, but it gives an indication of the many intractable problems facing the world today. This scenario calls for a shift of the paradigm itself whereby knowledge that is produced is transformative knowledge that restores the universities to a meaningful relationship with the society in terms of addressing the local needs of the societies in question". Transformative knowledge in this case, can be suggested to be a knowledge economy that can break the tension that exists between the communities and universities whereby, universities have detracted to serve the global economic interests and culture at the total exclusion of communities' economic interests., a situation that perpetuates problems such as poverty, food security, unemployment, climate change, healthcare, over population, crime, drugs, to name a few hard pressing ones in the local communities.

3.3.3 Perspective of education in Australia

Basic education, as conceived in the Council of Minister of Education in Australia: www.cmec.ca, relates to education for all children and the provision to all people of the skills and knowledge to improve their quality of life [Papua New Guinea Universal Basic Education Plan 2010-2019, 2] in Bellew (2010). Basic education in Australia is universal for all children, both aboriginal and non-aboriginal. In other words, basic education is free for pre-primary, primary and secondary school learners and it is also compulsory. This structure of basic education in Australia is aimed at ensuring that all young people attend school until they are 17 years of age, thus indicating the government's commitment to basic education as a fundamental right.

In Australia the integration of IKS into the curriculum is viewed from the perspective of "from exclusion to negotiation" and based on the terrible history of the outright contempt of the knowledge of Aborigines whereby 'Aboriginal children were expected to abandon their language, and culture altogether'. According to Miller and Davey (1988, p. 25), this amounted to cultural genocide cited in Burgmann & Lee, (1988); (2010) ED 4101 Module). However, Australia's Aborigines have not allowed the unspeakable history of colonialism to cause them give up their struggle to reclaim their 'lost' knowledge or lost cultural content, Harris, (1988). For example, in the model of an "ideal curriculum" developed by Harris, (1990) in Odora Hoppers, (2002, p. 84) and dubbed 'a dual curriculum'. With the dual curriculum, the aboriginal community planned and implemented the Aboriginal component of the said curriculum and non-Aboriginal teachers, who taught the Western curriculum, were trained to accept the ethnic minority curriculum as equal in status to the mainstream curriculum and "not merely as a token acknowledgement of cultural differences" Partington & McCudden, (1992, p. 237).

Australia's IPs have also faced challenges in the process of integrating IKS into their education system by means of a culturally responsive curriculum. The challenges for reclaiming their

knowledge systems happened in Aotearoa New Zealand, and Canada by means of being pragmatic in their course of reclaiming their lost cultures and they have shown deep determination in reclaiming their 'space, voice, presence and power across all areas of their life from, economics, law, health and education', Sissions (2005,p 10) maybe this attitude of the Aboriginals have been motivated by their view of a 'cultural interface' which, according to Nakata, (1995) refers to the 'inherent complexities that exist at the meeting grounds of IKS and Western science' (Nakata, 1995 in Hauaser, Howlet & Matthews 2009, p. 46) when it comes to incorporating "a discernible indigenous voice' Nakata (2007, pp. 7- 8).According to Nakata, (2007),indigenising the curriculum is a process which not to be viewed in a light manner. He highlights the complex and contested nature of the process that should not be mistaken as a simple addition of "Indigenous components to the mix", Hauser, Howlett, & Matthews, (2009). The arguments raised thus far clearly suggest that the integration of IKS into the curriculum for basic education in South Africa will not be an easy task, as it will involve complexities that goes with underestimating the process of transforming the curriculum that may render it an impossible task to accomplish.

3.3.4 Perspective of education in Aotearoa New Zealand

In Aotearoa New Zealand, basic education is framed as Early Childhood Education (ECE) and includes kinder gardens, care services and home based care services [Education Counts Data services: [education counts.gov.nz/da-services](http://educationcounts.gov.nz/da-services)]. Basic education in Aotearoa New Zealand has undergone a second revision known as Te Whariki, which is a framework that provides early learning and development for children within both a socio-cultural context and the wider context of the child's world, (New Zealand Ministry of Education) (1996).

Like Canada, Aotearoa New Zealand is in favour of the concept of a culturally responsive curriculum. However, the context of cultural responsiveness in the education system in Aotearoa New Zealand differs from the approach adopted in Canada and Australia because the Maori perceive cultural responsiveness as being primarily "for and with Maori" learners because the Maori consider the quality and delivery of indigenous education to be of prime importance for Maori learners. In other words, a Maori learner is Maori first before being a learner in the New Zealand education system. It may, therefore, be suggested that, to the Maori, the validation of the Maori indigenous pedagogies by means of utilising indigenous pedagogical practices represents their aspiration to strengthen their identity. Chona Pineda Kennedy (2013, p. 5) highlighted that indigenous education, in particular, Maturanga Maori was considered to be of prime importance in the quality of the delivery of education for Maori students. These examples of the international perspectives of basic education of other countries, namely, Australia and Aotearoa New Zealand, as well as Canada, have been included in the discussion to highlight the significance of basic

education in countries with a colonial past. Basic education in these countries has, at its basis, the principle of fundamental human rights with the Rights of IPs as the core.

3.3.5 Perspective of Education in South Africa

In South Africa, it is problematic to define the term 'basic education' as a result of the lack of a nationally accepted definition. However, section 29(1)(a) of the 1996 Constitution of the Republic of South Africa, stipulates the provision of basic education to all by the government in power. This section binds South Africa, like the other international countries mentioned and others, to make available the resources required for the provision of basic education to ALL in the country.

Canada, Australia and Aotearoa New Zealand are mentioned repeatedly in the narrative of this study because they are all linked by the assimilation strategies, which the colonisers used in their education systems as well as in the education systems in African order to marginalise the IKS of these countries to satisfy their own imperial greed. This may also explain why one of these three countries namely, Canada was chosen for the purposes of narrowing my sampling scope for this study. Although the three countries' advocacy for the integration of IKS in their education systems is unique to each country, the three countries do, however, share a similar colonial assimilation fate as South Africa. It should be borne in mind that advocacy for the recognition and acknowledgement of IKS should not be equated with low quality education. This antithesis theory is depicted in the international benchmarking for Mathematics and Science Report in which these said three countries rank among the best in the developed countries as indicated in the World Economic Forum (WEF) (2015). This statement gives rise to the question as to what differentiates South Africa's basic education system from other education systems globally.

The Ministerial Task Team Report of the National Education (MTTRNE) in 2014 highlighted that, the quality of education in South Africa is generally one of the worst in the world, based on the tests of the team's findings that revealed that South African learners are far from achieving minimum basic competencies across the curriculum. This worst or poor quality of the education system, may first be supported nationally by the South African Department of Education's systematic evaluation which made reference to the performance of the grade 6 learners in 2005 as a baseline where learners obtained a national mean score of 38 in the language of learning and teaching (LOLT); 27 in Mathematics, and 41 in Natural Science (Department of Education, 2008).

If this scenario is taken in conjunction with the question posed above, it may be concluded that, South Africa's education system is continually performing poorly in comparison to other countries in the world. Internationally, these claims about South Africa's poor performance globally were highlighted by the WEF's release of its 2015 Global Information Technology Report (GITR), as

highlighted above, which ranked South Africa last in terms of the quality of mathematics and science. Earlier, I referred to the fact that the South African education system continued to perform poorly as indicated in the TMSS Reports of 1995, 1999 and 2000 as also highlighted by Reddy (2012) in the Human Science Research Council's (HSRC) report, which showed that the trend analysis of the TIMSS in South Africa revealed that the national average score had remained static over the years 1995, 1999 and 2002. Concerns about this spiral trend of poor performance of South Africa, as reported in the TIMSS reports, have been raised as a cause of concern in different quarters in the country (Trong, 2010, cited in Spaul, (2012).

In addition, the Minister of Finance, Pravin Gordhan, bemoaned the said poor quality of education by stating that, "organisations involved in the transformation of education in South Africa, like Kagiso Trust, need to rethink their ways on the improvement of the outputs of the sector's poor growth in education which is a serious limitation to the growth of the economy". This anomaly in the education system in South Africa, could be regarded as sign that new paradigms are needed to transform the education system, in this case it would mean, the curriculum that will capacitate the learners of South Africa to relate to their worldview in the education system because, as it is, what they are taught in subjects like Mathematics and Science does not relate to their worldview and that could be the reason for their lack of global competitive edge in the so called critical subjects like Mathematics and Science. However, this argument is far beyond the scope of this study in terms of the problem mitigation of the dynamics of the classification of which subjects are critical and which other ones are not.

Furthermore, the said poor outcomes noted in the TIMSS Reports (2012) paint a negative picture of education in South Africa as lacking behind in global competitiveness despite the government's initial focus of revitalising the entire education system from bottom up in the areas of Science, Technology and Mathematics (CEPD, 1994b). It is, therefore, clear that the reflection on the outcome of the international benchmark above, indicates that South Africa has not yet achieved its optimum level of improving the quality of education in the country.

At this moment, it is worth remembering the words of the DST Minister, Mosebudi Mangena, when he mentioned that, South Africa has a commitment to be judged by the international community on the country's performance in the IK policy and practice on the ground, in this case, in the transformation of the education system, to elevate it to a level of even competitiveness with other international countries such as Australia, Aotearoa New Zealand and Canada, that are redefining their education systems to relate them to their IKS which they have acknowledged as a "missing factor" in the transformation of their countries' education system and the indigenous learners' worldview.

It is, therefore, clear that the quality of education in every country in the world is the yardstick for working toward sustainable economic growth (SEG) in that particular country, suggesting that, if the quality of the country's education system is poor, then that country's ability, in respect of sustainable economic growth, an issue which is crucial in terms of the Agenda 21 of the MDG 2, and Sustainable Development Goal 4 (SDG4) for the 2030 projection, stands to be questioned. Thus, IKS, as the only sustainable untapped knowledge, may be South Africa's only hope in terms of its potential to develop the country's economy for competitiveness in terms of a better quality of life in our country.

3.4 CONCLUSION

SARChI's development of new concepts on development in education may be perceived to have the capacity to actualise the "new social contract" by means of penetrating the barriers created through the epistemological disenfranchisement that had become the foundation of colonial education's legacy in South Africa and elsewhere. Given a chance, these new concepts may ingrain the culture of peace in education, as projected by Odora Hoppers (2009, p. 5). In other words, training for a way of life of peace would infuse the current and future generations with a profound version towards violence. It is also a method of expertise and struggle as a part of human existence and coming to know the talents for the transformation of these conflicts without resorting to violence.

This may be the ultimate aim for reconciliation education, which takes the good, and best from different cultures, traditions and faiths to create a new ethics for human existence in a sustainable way. While countries such as Canada and South Africa are attempting to use restorative justice as a concept for a humane future, a curriculum that is open to diversity may be used to reconcile past injustices and reconnect humans to one another for "we have talked past one another for far too long", concept borrowed from Metge and Kinioch (2014)'s concept of 'talking past one another' with regard to misreading's made, when assumptions, actions, same meaning are made while actually giving them different ones.

CHAPTER 4

HISTORY OF ASSIMILATION

4. INTRODUCTION

Assimilation was the bedrock of the colonial experiences in Canada, Australia, New Zealand and South Africa, as it has been highlighted in chapter 2 of this study. These countries' impact of the legacy of colonial education in their curricula has left them with marks like that of a "hyena". For example, in South Africa, to this day, IL do not understand themselves in terms of the absence of their worldview in the curricular, they are not able to see themselves in the "two-coloured face" curriculum. The historical background of assimilation in Canada will be cross-referenced to that of Australia and, Aotearoa New Zealand, because the attempts for assimilation in their countries had striking similarities which will be explored in this chapter.

The background to assimilation in these countries may be better understood by referring to Armitage's highlights (1999:258) on the following issues:

- Understanding government objectives that have controlled aboriginal children is important because the policies of the past have shaped, regulated and attempted to assimilate future generations.
- Therefore, the social policies used to carry out these objectives, are partly responsible for the poor socio-economic position of the IPs.

The implication of the issues raised above highlights the fact that, the assimilation tendencies in Canada, Australia and Aotearoa New Zealand have left the legacy of cognitive underdevelopment among the indigenous populations that have, in turn, resulted in the poor socio-economic performance that perpetuates the cycle of poverty among the indigenous communities, thus leading these communities into becoming a liability to their respective states with regard to their state's welfare services. The poor social economic conditions as raised in Armitage (1999: 258), are the main course of the indigenous communities' overdependence on the welfare services of their states which is primarily a result of the loss of their tribal lands, land alienation including forced removal, confiscations, broken treaty promises, wars, systematic individualisation of land titles and long-term land leasing.

The argument above illustrates the significance of land to an indigenous person in that, land is the source of life for the indigenous people, thus, suggesting that confiscating land from a person

means rendering that person a lost individual, without possessions, without the franchise and without space that can serve as a laboratory where the IL can perform their knowledge scientific trials. This may be seen to be implying that the dispossession of the IPs' land has been the course of the total disruption of the indigenous communities' life, be it in Australia, Canada, Ne Aotearoa New Zealand or South Africa. While Western school models rely on laboratories for their scientific or realistic" investigations, indigenous communities rely on the land and its ecology as their laboratory.

IKS, with its social, history, identities, economic and practices, is linked to the land, thus suggesting that the forcible confiscation of IPs' land amounts to taking away their source of life, including knowledge and leaving them dislocated from themselves. Many of the definitions on IKS clearly show that the pragmatic nature of IKS roots is grounded in the land. For example, McGregor's (2004, p. 77) proposition of IKS as a body of knowledge built up by a group of people through generations of living close to nature includes a system of self-management that governs resource use. With its roots in the past, traditional environmental knowledge is both a cumulative and a dynamic process of building upon the experiences of earlier generations and adapting to the new technological and socioeconomic changes of the present.

The 'cumulative and dynamic' nature alluded to in relation to IK is of paramount importance for the intense and long-term relationship that the IPs have had and continue to have with their environment. As indicated earlier, there is no space for without land this knowledge to be 'updated' in a rapidly changing world and in the acquisition of new information. The issue of resource use in the definition above may be linked to Agenda 21, Chapter 26 (1992), wherein the issue of resource use is considered one of the most relevant provisions in paragraph (26.3.) which calls on governments to take measures "in full partnership with the IPs and their communities". Notably, these measures include,

- Recognition that the lands of IPs and their communities should be protected from activities that are environmentally unsound, or that the indigenous concerned,
- consider to be socially and culturally inappropriate;
- Recognition that traditional and direct dependence on renewable resources and ecosystems, including sustainable harvesting, continues to be essential to the cultural, economic and physical well-being of IPs and their communities according to Battiste & Youngblood (2000, p. 190).

The salient issues in Agenda 21 highlighted above, emphasise the need for direct participation of IPs in decision-making and management to ensure that their rights are truly respected. The

anticipated inclusion of the IPs in terms of the mandates of Agenda 21, echoes the issue of the problems facing the world today that require new paradigms as the “old” paradigms created by science have not only failed to improve the lives of IPs but have also resulted in the world’s unsolved problems. However, the latter situation may be remedied by a directive to the governments of the world to work collectively with the IPs and their communities globally in developing and strengthening national arrangements that must reflect the IPs’ needs by means of incorporating their values, traditions, other knowledge’s, and practices in national policies and programmes. That is the reason why this study may be said to be relevant in relation to the global projection of Agenda 21 concerning the sustainability of knowledge systems.

The history of assimilation in the four countries, namely, Canada, Aotearoa New Zealand; Australia and South Africa, has impacted negatively on the education systems of these countries, especially in cases where the IKS of the indigenous communities were under siege by the colonial powers that used missionaries as ‘baits’ to allure the indigenous communities in the respective countries by means of using religion to control the minds of these communities in order to ‘soften their hearts’ under the guise of civilisations meaning progress or modernity. Christianity and civilisation were made to appear as an entry point to development. This suggest that religion was used as a ‘gate keeper’ for civilisation in terms of the Western view and without which there would be no hope for the indigenous community to become part of progress.

This type of oppression of the IKS of IPs is highlighted in Battiste’s (2005) view regarding education as cognitive imperialism which relates to the concept of using a curriculum as a hegemonic tool that will manipulate the thoughts of indigenous learners at the total suppression of their original ideas that they are born with or bring from home as valid knowledge. This type of hegemony in education may be seen as a blurred education system which was made to appear by colonialism as if it were benefiting the indigenous communities by teaching them, for example, in English as a “universal language” while, in reality, the learners are being blinded from seeing themselves in the subject’s/learning areas which they were being taught. This further raises a question, as to whether learning in English equips the learner, with the skills to be able to compete in the global arena of knowledge production and teaching and learning. It is because of the said assumption that English has been elevated as language supreme. The elevation of English above other languages, has been echoed by Odora (Hoppers 2003), in the reaction to teaching and learning (T&L) that are exclusive, that are related to scientific paradigms and, lacking in the realty of the indigenous perspective, which in the case of South Africa, it would be in reaction to the African perspective which is still missing in the curriculum for basic education. It is such exclusive T&L assumption that excludes English as the only viable language that has resulted in South Africa and Canada being in the positions in which they find themselves in terms of the “regime” of culturally isolated knowledge production.

This regime relates to the symbolic languages used in the prevailing educational systems that are not learnt at an early age, thus resulting in an education system that is alienating for the indigenous child, both culturally and epistemologically. This argument addresses one of the research question in this study, namely, what led Canada and South Africa to where they are to today in relation to the integration of IKS into the curriculum? This statement about symbolic languages also talks to the sub-question about how the experiences resulting from the challenges identified may be used in proposing a model for the integration of IKS into the curriculum for basic education in South Africa. It was anticipated that this articulation would enable the researcher to be able to produce findings, suggestions, and future research questions.

The argument in this study is focusing on the integration of IKS into the curricula in relation to the cases of Canada and South Africa. It would, therefore, be relevant at this point to move on from the discussion on the general background of assimilation in Canada, Australia, Aotearoa New Zealand and South Africa and, focus on specific cases of assimilation in relation to the subject of study in question, which is about the possible experiences that Canada may share with South Africa on how to out of the assimilation education to a transformed education that enable the IL of a country to be able to identify themselves in a two faced curriculum mode.

4.1. Canada

The aboriginal learners in Canada were forced into immersion by means of European curriculum as means of continuing the processes of colonisation, which are termed as, cognitive imperialism and neo colonialism in Battiste's (1986:23). These processes of cognitive imperialism and neo-colonialism, were the initiation of the missionaries' contact with the indigenous communities and, under the guise of protection by the colonial powers, which eventually led to land occupation and the guardianship of these lands by the colonial powers (Dickason, 2002, in Prochner 2000). These interactions between the colonial powers and the indigenous people led to the adoption of assimilation which unfolded as conversion to Christianity and the adoption of a Euro-Canadian lifestyle William Yates (Yates, 1836; Beecham 1836, Semple 1996; in Prochner (2004) stated that 'conversion must precede civilisation, based on the fact that civilisation commences at the moment Christ is established'.

There are various debates on which of these theories emerged first – the theory pertaining to civilisation or the theory on Christianity. Nevertheless, it is possible to draw the conclusion that, no matter which theory came first (Christ or civilisation), the other theory was a close second based on the fact that missionaries' assimilation strategies included the immersion of the IPs into European life and culture. This may be likened to the ironical example that recurs even today in South Africa where the mission schools that have adopted the Pestalozzi model of teaching in English are totally excluding the indigenous languages while, in countries such as Canada, the

Pestalozzi model schools teaching in English with the indigenous languages on the side in their Early Childhood Education Programmes (ECEPs).

The historical development of assimilation into European life also included the passing of the amended Indian Act in 1894, as cited in O' Connor (2000) which allowed the government to force "Indian" children to attend school with children not attending school being labelled as delinquent and their parents becoming liable for a fine. Of the most critical element to be addressed in the history of assimilation in Canada was the history of the residential schools which formed the nucleus of the cultural genocide of the indigenous communities in Canada. This is the reason why, in the recent attempts of the country's review of the course of the reconciliation of the nation's deep-seated differences, the issue of the residential schools became the central focus of the latest policy on the Truth and Reconciliation Commission (TRC) of 2015.

4.1.1 Canada's conceptual view of the integration of IKS into the curriculum

In the Canadians' view indigenous knowledge systems are conceptualised as a system of knowledge that does not encompass a single body of knowledge but, instead, a body of knowledge that reflects multiple layers of being, knowing and expressing. This notion has been reflected in the Canadian International Development Agency (CIDA) in the following way:

Indigenous knowledge represents the accumulated experience, and know-how unique to cultures, societies, and/or communities of people living in an intimate relationship of balance and harmony with their local environments. These cultures have roots that extend into history beyond the advent of colonialism [as will be demonstrated in the case of Africa by means of locating Afrikology as the core all knowledge's]. They stand apart as distinctive bodies of knowledge, which have evolved over many generations within their particular ecosystems and define the social and natural relationships with those environments. They are based within their own philosophical and cognitive system. In this way, they serve as a basis for community's level decision making in areas pertaining to governance, food security, human and animal health, childhood development and education, natural resource management and other vital socio-economic activities. Some see IK as a last hope in implementation of a sustainable future (Draft Policy Document on Indigenous Knowledge & Sustainable Development [CIDA], September, 2002, 3. in Settee (2013:12).

The conceptualisation of IKS above highlights the fact that the Canadian's perception of IKS is that of a knowledge that is connected to the knower (elder), the land and the ecosystem. These three tiers constitute the basis for the indigenous people's day to day living from governance to the socio-economic activities that have been inherent to their survival and continues to be their

only hope for future sustainable development. The Canadian conception of knowledge as the three tiers may be one of the lessons that Canada may share with South Africa as one of the research questions that was posed referred to the content areas on which that the Canadian conception of IKS integration into the curriculum focus, namely, the cultural knowledge held by learners, and local knowledge content. These content areas are packaged in the curriculum in the following areas:

- Science: Aboriginal perspectives and knowledge in school science. This has the potential to resolve the social, cultural and environmental crises that impact all humanity
- English Language and Arts: Stories in the form of narratives that may be used for teaching in the traditional oral way, written; through the spoken word, song, writing, and music. [Reference to English First People's 10, 11 and 12, from 2008, 2010 and implementation in 2011]. The First People are normally referring to IPs in Canada that comprise of the Inuit and Métis.
- Social Sciences: Include First People's perspectives in social studies (SS) including residential school policies
- Mathematics: Exploring Mathematics from K-12 (from Kindergarten to grade Twelve) through an indigenous lens
- Health and Physical Education

(Excerpts from: Chrona, J. (2015). First people's principles of learning. Retrieved from <https://firstpeoplesprinciplesoflearning.wordpress.com>)

This sample of the Canadian curriculum packaging shows an emphasis on the balance of the integration of all aspects of being, and the interconnectedness of a person's physical, mental, spiritual and emotional aspects to be of particular significance in the teaching and learning in the health curriculum. The integration of aboriginal, (indigenous) perspectives into all Canada's First Nations Curricula constitutes an integral aspect of the curricula and is not merely an add on. It should be highlighted that, for this culturally responsive curricular to be compulsory teachers should see themselves as learners and seek to develop their own understanding first. South Africa has been found still to be lacking with regard to IK as connected to the "elders" as the knowers while the ecosystem and land are still a contested issue in the political landscape and in education, in particular. This issue will be discussed later in the study.

4.1.2 Contestation of Education in Canada

The IPs of Canada are still bitter about the residential schooling system which was geared at rooting out and destroying IK, the indigenous languages, and cutting the children's ties with their natural family and, inculcating Eurocentric values, identities, and beliefs that were structured in such a way that they destroyed the indigenous children's self-esteem, self-concept, as well as

their healthy relationship with each other and their families. These appalling realities of the residential schooling systems, prompted movements that called for the revelation of what had actually happened to indigenous children in the residential schools in Canada. One such movement was the Coalition for the Advancement of Aboriginal Studies (CAAS)

4.1.3 Coalition for the Advancement of Aboriginal Studies (CAAS)

The setting up of movements such as CAAS was driven by the hope for sustainability which would be possible by means of confronting the painful past - by means of surveys and testimonies of the survivors of the residential schools to the Canadian Truth and Reconciliation Commission (CTRC). The national Student Awareness Survey of 2001, also known as CAAS, aimed at measuring the awareness, attitudes, and knowledge about facts about the IPs' histories, cultures, worldview and current concerns. The survey resulted in a report entitled, 'Learning about Walking in Beauty' (LWB), which, was ground-breaking in terms of the need for a curriculum that included abroad and honest account of indigenous histories and cultures, and in relation to an awareness about land, the connection to the history of all Canadians and, the IPs' relationship to Canada as reflected in the 2000-2001 (CAAS), <http://www.edu.yorku.ca:8080/~caas/> Accessed in January, 01, 2016). This site, sheds some light on the perspective of exploring the indigenous culture of teachers and students for K-12. The report of LWB, was regarded as a unique pedagogical framework, towards the inclusion of IK in education in Canada, based on the four directions of the learning circle or medicine wheel as depicted in the diagram below:

4.1. 4 The medicine wheel in relation to the education system of Canada

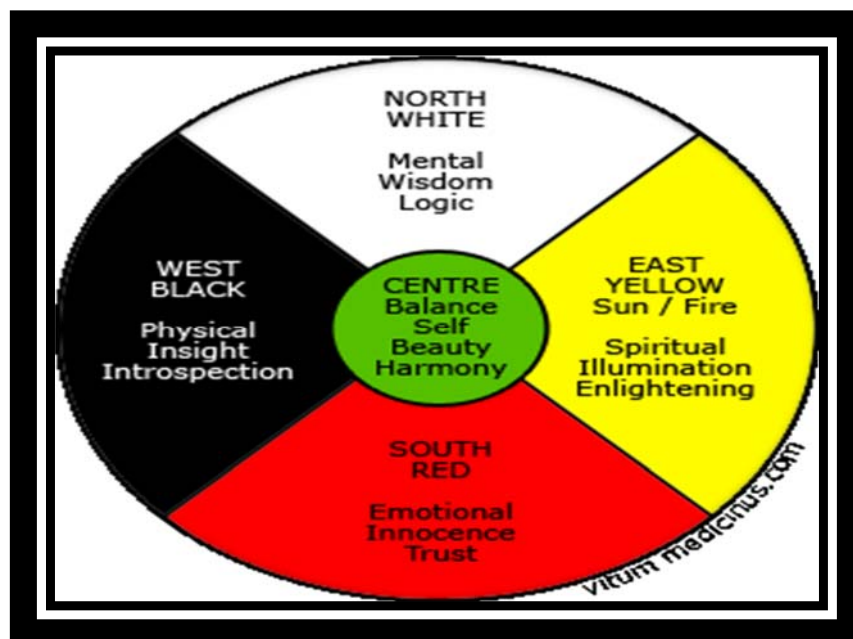


Figure 3: Canadian Medicine Wheel (www.crystalinks.com/medicineWheel: Elaborated in Settee [2013 pp,48-49])

The basis for learning and understanding as anchored in the medicine wheel reflects the following:

- The North section covers issues such as language, traditional spirituality, cultural elements and customs, relationships, including other components of the natural world and responsibilities of individuals, families, clans, nations and confederacies. Furthermore, this section covers indigenous perspectives on traditional education and history, and the importance of restructuring what is being taught, about the IPs of Canada.
- The East section addresses the process of colonisation, treaties, land, theft, and the exploitation of resources on unseeded territories. It also includes issues such as the residential schools' policies of forced assimilation, similar to the Indian Act of 1894.
- The West section represents the decolonisation process of renewal and rebuilding by means of encouraging and preparing students to take up adult civic responsibilities
- The South section addresses the students' positive view of the concern for changes that facilitate understanding. This positive view of the students may be confirmed by the students' evaluation and determination regarding the Canadian education system as referenced in the CAAS data's findings in the Royal Commission on Aboriginal Peoples (RCAP 2001. 130)

The medicine wheel depicted above, provided a framework for the contents of a mandatory curriculum in Canada as outlined by the CTRC on the curriculum. The contents of the curriculum led to a reflection on the cultural values of the indigenous communities of Canada in what came to be regarded as a culturally responsive curriculum.

The movements for reconciliation, such as CAAS, were prompted by the last hope for the IPs of Canada which was based on an education system that would reimagine restorative education programmes, that would reflect their lives of connectedness to nature. The IPs of Canada are convinced, that they would, be able to "draw" from, restorative education programs as reflected in the Medicine wheel, in the event they would have to face the problems of their past such as inequality, inequity, gaps in the education system.

The said restorative programs, conscientised the IPs about issues of colonial conscientisation, and hegemony in politics, and agency, to diverse groups. At the same time, the IPs of Canada believe that, these restorative programs acknowledge excellence through proper valuing and respectful stream of IK, throughout and beyond, and also, deal with the restoration and wellbeing of both, themselves and their communities by means of enabling them to reshape their contexts,

improve their situations and institute reform that are based primarily on a complicated association of conscientisation, resistance, and transformative motion.

According to Battiste, M (2013, p. 69), the onus for starting the processes outlined above rests on the educators. There is little doubt that these programmes would be meaningful if a process of collaborative conscientisation was used. This is one of the emerging concepts in the Canadian transformative education debates which, are aimed at bringing together both the indigenous and non-indigenous people of Canada, in an attempt to engage them collectively on discourses that are continuing to marginalise the IK of the indigenous people in the curriculum.

4.1.5 Collaborative conscientisation (CC)

According to Battiste (Ibid), the act of collaborative conscientisation (CC) would have to be the prerogative of indigenous educators to sensitise the Eurocentric consciousness, in general, and educators, in particular. The conscientisation process would relate to both the colonial and neo-colonial practices that continue to marginalise and racialise indigenous learners.

In my view, collaborative conscientisation is a collective venture of scholars in Canada and beyond. This CC concept, emerges as being, aimed at the deconstruction of the colonial discourses that continue to be reproduced in the curricula by policy designers who have been trained, in the Western education models (WEM). This is a difficult task to have to convince and 'unlearn' the scholars and policy designers of their educational training, which applies to the West, and which is so engrained in their mind-sets that they are not able to see past it.

The act of CC revives the status of the indigenous knowledge as being constitutionally protected as Aboriginal and Treaty Rights under section 35(1) of the Constitution Act, 1982. The said Act provides affirmation of the indigenous traditions and customs that existed before the IPs' contact with the colonists. The affirmation has led to the acknowledgement of indigenous values of Canada in Canadian law. Another Act of the CC was that of indigenous diplomacy (IDip) which, according to Battiste (2013, p. 70), refers to the collaborative work of scholars in Canada and beyond to Australia, Aotearoa New Zealand, and the United States. IDip takes the active collaborative strength of action of indigenous scholars and leaders, as postcolonial and anti-colonial movements towards constructing multiple critiques of the modern discourses within the multidisciplinary foundations of the current system. This approach to conscientisation echoes the concept of transdisciplinarity, as alluded to in chapters two and three in this study, as one of the new emerging concepts adopted by SARChI-DE and, which highlights the fact that, it is not possible to overcome the problems that Africa and the rest of the world are facing today, by relying solely on the western paradigm which, to date, has dominated world thinking as the only mode of knowledge production that is capable of addressing world issues.

The monolingual approach has failed the world to address its mounting problems in spite of all the scientific and technological advancements in the 21st century. This is, in fact, the reason why with the Canadian indigenous concept of collaborative conscientisation and transformation in multiple sites has provided hope that it is possible to engage diverse problems by means of multiple strategies, strategic goals, and broad political agendas. This approach was highlighted by Graham Smith, (2000), with reference to the fact that, the struggle of IPs cannot be reduced to singular solutions in single locations and, that their struggles must be addressed by multiple strategies. These multiple strategies could relate to academic analysis and research, political activism, resistance, lobbying, self-reflection and the emergence from the cognitive imperialism that, the IPs have been subjected to. A practical example of such multiple strategies in Canada has been, the Idle No More Movement which highlights, the plight of IPs, oppressed peoples, vulnerable women and children in Canada and across the globe.

The Indigenous Renaissance (IR) is another collaborative conscientious act, which is a collective responsibility between the IPs of Canada and Canadian society in general. The IR, prioritises the transformation of the IPs' relations, by respecting their country's knowledge's and heritages. This collectivist approach is intended for both the present and for the future. Some indigenous scholars have come to refer to this action's agenda as an "indigenist" agenda that extends far beyond the indigenous agenda alone and also, involves collaboration with non-indigenous allies as was advocated in Len Findlay's essay "Always Indigenise!" Finland (2000, p. 368).

In addition to the collaborative conscientious acts mentioned above constitute a further act which merits mention, is one that the Canadian Association of Deans of Education (CADE), developed in 2010 as reflected in Battiste (2013:94) as an Accord on Indigenous Education (AIE). The mission of the AIE accord, according to Battiste (2013) is to outline the importance, urgency, roles and responsibilities of the colleges of education in Canada, and to respect the developing and pursuing mechanisms, and structures, aimed at improving indigenous achievements through the structures and mechanisms of education. All the AIE mechanisms and structures for transforming Indigenous education directed at decolonising education are grounded in the beliefs of social justice, as well as collaborative and consultative principles for the IPs' multiple partnerships within communities and beyond and also the recognition of the value of indigenous knowledge.

These collaborative conscientiousness acts alluded to, about encapsulating the decolonising of education, have been articulated by various renowned scholars from different countries. These scholars include, Battiste (2013), Linda Smith (2012, p.147) of Aotearoa New Zealand, who articulated twenty-five decolonising methods that include the involvement of non-indigenous people in the "indigenising and indigenist process. In the indigenising and indegenist process, the consciousness is centred in relation to the setting of the Indigenous world, as highlighted in Lester-

Irabinna Rigley (1999) of South Australia, and Sean Wilson (2013) of Canadian Battiste (2013, p.74), and Gravelline (1998)'s "in-relation pedagogy". These indigenist approaches to decolonising education, convey the message that, it is not necessary to be indigenous to use this Indigenous research approach, although, it should be involving both a sharing of ontology and a practice that empowers IPs in relation to context-based knowledge, that is community-based and book, or literature-based knowledge only. These emerging concepts in the Canadian education landscape could be added to some of the ideas that Canada could share with the South African Department of Basic Education, on how to decolonise the curriculum – a topic which has become very topical in the South African landscape albeit, a call from higher learning institutions at the moment.

4.2 CONCLUSION

Assimilation has left a legacy of low achievement in Canada, Australia, Aotearoa New Zealand and elsewhere. This legacy has had negative impacts on IL in schools and resulted in the poor performance of the IPs' minority groups in the socio-economic strata of the countries in question. Nevertheless, the IPs of Canada have emerged resilient from the terrible legacy of assimilation and, the concomitant cognitive imperialism and, with the conviction that, education provides their only hope of reclaiming their rights to individual empowerment and self-determination. This conviction evolved into a struggle to sensitise the euro-centrally educated Canadians to the colonial and neo-colonial strategies that are continuing to marginalise and racialise Canada's ILs.

The Indigenous people of Canada are adopting transformative approaches to reconcile the disparities that have been the result of assimilation policies, especially in the education system. The reconciliatory approach to education that Canada has adopted is framed, as CC, which, as is self-explanatory, includes even the non-indigenous allies in reconciling the education system of their country by means of the process of decolonisation. Decolonisation in the Canadian indigenist sense, applied the methodology of IR, that is a collaborative effort between the IPs and the non-IPs to transform the agenda of all the people of Canada from complicity to subordination, land dispossession or misuse.

The reconciliatory approach to decolonising education in Canada used the transdisciplinary approach to balance the indigenous and European ways of knowing. It is possible that the recognition of the said balance, may assist to illuminate the three main approaches that have thus far been adopted in European scholars' understanding of indigenous knowledge and which, according to Battiste (2013, p. 95), aimed:

- To reduce IK to categories such as art, religious practices, culture or traditional ecological knowledge (TEK)

- To reduce IK to its quantifiably observable empirical elements, such as farming or hunting practices
- To assume that IK has no validity as it cannot be verified by scientific criteria.

These theories of IK espoused by European scholar's reveal limitations in the understanding of IK as a holistic knowledge that is, fundamental to the sustainability of both IPs, and its potential for generating new knowledge in the interface between two knowledge systems. It is for these reasons that the argument for the integration of IKS into the curriculum should be regarded as salient feature in elevating the knowledge of the IPs all over the world from its inferior position to which Western knowledge has, for far too long relegated it.

CHAPTER 5

SYNTHESIS OF SOUTH AFRICA AND CANADA'S CASES: CHALLENGES OF CURRICULUM TRANSFORMATION

5. INTRODUCTION

This chapter represents the working thesis statement in response to the research question: What have been the challenges experienced by South Africa and Canada with regard to the transformation of the curriculum from a colonial type of curriculum to a transformative type of a curriculum?

5.1 Challenges experienced by South Africa in the process of curriculum transformation

After 1994, the education system in South Africa made provision for the development of the new training and skills required to meet the quantitative requirements of the growing economy. New pathways were developed, so that learners could move between these pathways, in order to broaden their access to skills development opportunities. It was essential that these new training skills were in the curriculum in order to meet the workplace needs.

The post 1994 political transition led to numerous changes in the education system in South Africa. These changes in the educational landscape may be viewed as, an attempt to redress the imbalances of the past with regard to access, equity and quality in education. The result of the changes led to revisions of the education curriculum from the Revised National Curriculum Statement (RNCS) in 2002 for Grades R–9; the National Curriculum Statement (NCS) in 2003 for Grades 10–12 and the Curriculum Assessment Policy Statement (CAPS) in 2012 for Grades R–12. In all these reviews, the Department of Basic Education (DBE) attempted to design the national Curriculum, in such a way that was flexible and adapted to local conditions and needs at the school level (www.education.gov.za). These curricular reviews were done with the crucial expectation that, the curricula would be interpreted and implemented in different ways in diverse contexts. For example, the Life Sciences (LS), which are made mention of in the 2003 National Curriculum Statement (NCS)'s, raise and motivate the learners' awareness of and open-mindedness towards the existence and recognition of the multiple views in a multicultural society.

Based on the above, it may be suggested that, there has been room created for the recognition of other KS in the NCS although, there is still a sense of muteness in the acknowledgement and recognition of IKS by the Department of Basic Education (DBE). In other words, there appears to

be no sense of owning up regarding the meaningful integration of IKS into the curriculum for basic education by the DBE per se. The concept seems to be just bandied about, or rushed as a form of “indigenous tokenism” as also, highlighted by (Ogunniyi 2007b) that, the National Curriculum Statements require that IKS be included in the curriculum, however the IKS that should be included has not been clarified. This view can be subjected to the lack of any mandatory voice from the DBE as has been the case with the ministries of education in Canada, Australia and Aotearoa New Zealand. This was made evident in these countries by means of the Ka o papa Maori in Aotearoa New Zealand. The question now arises as to, how the teachers in South Africa took advantage of the room created by Curriculum Assessment Policy Statement(CAPS) for the functional implementation of IKS in the curriculum for basic education in diverse contexts. The answer to this question was sought by an examination of selected research cases on basic education in South Africa in recent years.

5.1.2 Research on basic education in South Africa: Southern Africa as a point of cross reference

Reference will be made to particular studies in South Africa on IK, while starting with the unique example/s from elsewhere in the continent. Most of the recent research studies in Southern Africa on the subject of IK and the curriculum highlight the fact that teachers in Southern Africa have been trained in the Western pedagogies that question the validity of IKS in the school curriculum. This background contributed to a lack of motivation on the part of teachers in most regions on the continent, including South Africa, in respect of learning and knowing about IK. For example, the study by Dziva, Mpofu and Kusure (2011) shows that there appears to be a need for a science perspective as a bridge between ILs and a scientific worldview. (Fakudze, 2004); George, 1999); Ogunniyi, 1998). It was clear from the study that teachers did not see any value in IK as compared to scientific knowledge (SC) on the basis that IK cannot be subject to proof testing.

Dziva, Mpofu; and Kusure’s (2011) study highlighted the sentiments of teachers in the Mberengwa district in Zimbabwe. Their sentiments were found to be similar to the attitude of teachers in one of the provinces in South Africa, with the findings of the particular study showing that teachers did not perceive IK as important while the indigenous ways of knowing were not recognised by some teachers (Jacobs, K.R 2015). In both these studies there is a “thin golden thread” that runs through them and which gives the impression that IK is still undervalued as compared to science which is regarded as the “superior knowledge” with all other knowledge should be subjected to its control. It is for these reasons that the argument for the integration of IKS into the curriculum for basic education in South Africa is proposed because (a) the integration of IKS into the curriculum may reconcile two separate ways of understanding the world, (b) its integration into the curriculum may promote the visibility of IK (c) its integration into the curriculum may help to enhance the IL’s self-

esteem and interest in schooling, (d) its integration into the curriculum may act as a buffer against the collapse of local knowledge in the face of the confrontation with the dominant paradigm of the West and (e) its integration into the curriculum should humanise a curriculum that has been dehumanised by modernity. It is on this basis that this study may be said to add to the ongoing contributions to the advocacy for the recognition and acknowledgement of IKS in the school curricula.

It is possible that the negative attitude of teachers towards the acknowledgement of IKS as valid knowledge to be included in the curriculum maybe attributed to the teachers being overburdened with paperwork, that would make their task of integrating IKS in the curriculum both overwhelming and impractical in most cases and, thus, dampening the spirit of openness as advocated in the NCS to LS and Physical Sciences (PS) as argued in Gundry and Cameroon (2008). In addition, there is also the reality of the problem of the limited resources available to teachers, especially in the rural communities where teachers are sometimes expected to implement the curriculum for basic education under very difficult economic conditions. This was captured in recent studies on the subject, for example, the studies by Hays (2002); and, Meyiwa, Letsekha, and Wiesbesiek, (2013) which attest to the abovementioned reality.

However, the studies by these researchers reflect the challenges that are experienced by teachers in the rural areas in South Africa in their attempts to transform the curriculum. The challenges faced by rural teachers in integrating IKS into the curriculum includes the complexity of the terms 'rural' and 'urban with regard to the historical context of the political past of South Africa's geographical settings, and also the overarching issue of teachers being trained in the Western continue to question the validity of IKS in the school curricula. The study in question relates to the rural area of Cofimvaba in the Eastern Cape Province in South Africa where research on the integration of IKS into the basic education curriculum is still facing the challenges of translation into transformational intent.

The study focuses on the development of teaching and learning materials that would be relevant to the Cofimvaba community's IKS in terms of its benefit to the school curriculum.⁷With hindsight,

7. The research project [started in 2013] referred to earlier is aimed at developing teaching and learning materials for use in the classroom. Based on the aim of the project, this project seeks to find ways of identifying and making use of local and indigenous knowledge which is envisaged to benefit the school curriculum and, consequently, forge links between the school and wider community. The study is based on the following broad research questions:

- a) What specific indigenous knowledge systems content may be used in a school curriculum?
- b) How may the local knowledge of Cofimvaba be used in strengthening and better contextualising the curriculum? The said questions cannot be addressed in the limited space of defining the education system in a regulatory way as it is, [The school-based system] - there needs to be an expanded space to allow all forms of knowledge to exist in a fair and just manner.

it may be suggested that, as much as the study appears to acknowledge the profound effect of IKS on the school curriculum, the study also reflects the illusion of the dominant paradigm of power dynamics between the “schooled” and unschooled”, in driving the transformative intent behind the curriculum for basic education. This type of an illusion, constructs a limitation that advances IKS to enter the predetermined notion of a school but not in the curriculum for basic education. In other words, IKS in this case has no authority, as it has been included in the school curriculum in a way that renders it, subject to the pre-existing traditional curriculum framework and, not in an independent form, thus enabling it to bring modernity’s other into the curriculum.

The analysis of the findings of the study by Meyiwa and others (2013) justifies the research question in this study which addressed the gap brought about by the superficial integration of IKS into the curriculum for basic education and that is evident even in recent research on the integration of IKS into the curriculum for basic education in South Africa. This is despite the insistence of the advocates of IKS, for example, Suzuki and Knudson (1992); and Suzuki (1997) on the profound educational and ethical relevance of IKS in the curriculum of an education that is basic and relevant to the setting of the learner’s worldview. This study intends to advance the notion that the integration of IKS into the curriculum for basic education should be realised in a meaningful way that, will lead to transformation of the curriculum for basic education to the social good of South African society as a whole.

Based on the above it may be argued that, the integration of IKS in the curriculum for basic education may be transformational only if there is an indication of a paradigm shift in terms of accommodating and validating the divergent cultures that learners, indigenous knowledge holders (IKH) and teachers bring to the classroom. This would have an impact on the argument for the integration of IKS into the curriculum for basic education in a postmodern era which embraces the diversity which may be realised only in a newly created cognitive space which is “open” highlighted in Odora Hoppers (2002:4) and specifically as per Lather (1993:33)’s classification below:

- for educational process: constructionist, open text and reader/centred, focus on interpretations, ideally dialogical and democratic
- for educational structure: situated, contingent/partial/in flux, use of new information and communication technologies
- for educational content: reality always negotiated, interdisciplinary, focus on micro
- narratives and what is missing from the mainstream discourse, multiliteracies, multiple intelligences, “multiple sites from which the world is spoken” The terms suggested by

Lather (1993) in relation to basic education are in line with the suggestion made earlier in this study about educating African learners in both 'rural' and 'urban' settings for the communal life and Ubuntu which are crucial for African thought and practice and the possibility of their realisation in a new cognitive space only. Ubuntu and communal life are African indigenous cosmologies that include the virtuous nature (moral roundedness or character leading to good behavior) of co-operative and interpersonal skills that may render basic education both sustainable and competitive, as highlighted in Letseka (2000); and alluded to by Okeke (1982); Boateng (1990) and Fajana (1986). It can be noted again that the aspiration of the post-apartheid education system in respect of basic education in the country is to provide education that is both sustainable and competitive in the global arena.

This aspiration regarding the sustainability and competitiveness of the curriculum for basic education, would have to be based on the development of both a vision and a practice of education that transcends schooling, since it would be about laying the foundation together with IPs and enabling them to participate in mastering and directing the course of change with regard to the vision of learning to know, learning to do, and learning to live together as equals with others.

The study by Van Wyk (2002) also engaged with the issue of IKS in South Africa through the conflicting messages rendered by the globalisation of education. Van Wyk (2002) highlighted, how the globalising world has impacted negatively on the IL in South Africa as result of the guise that all learners are the same in terms of cultural identity and that they all learn in the same way. The said globalised mentality towards learning has alienated the IL in the areas of learning in the Natural Science and Technology (NST), in particular. This argument is valid in relation to the issue of homogenising the cultural identity and common learning of the learners. However, it is not valid on the issue of using Natural science and Technology as a yardstick for the meaningful inclusion of IKS into the curriculum. The fact that Van Wyk's (2002) argument suggests that, the Natural Science and Technology are universal disciplines as compared to IK highlights the basis of the field of this study, because it brings in the issue of globalisation in education which has become a biased yardstick for any country's intention to transform their education system, should they wish to become competitive in the global arena. This argument, brings to the fore the issue of skewed power dynamics in the production of knowledge globally and in South Africa. These skewed power dynamics, in particular, have been created by the dominance of Natural Science and Technology in a curriculum that alienates the worldview of IL. It may be said that this dominance may be related to the reductionist approach of viewing education as a technical process that may be managed by specialists and, in this case, technology specialists in the environment.

Once again, it can be said that, this is a very narrow way of viewing education by means of compartmentalising it into the so-called universal knowledge and, hence, the need for the transformative concept of “transformation by enlargement”, in order to bring about an enlarged view of an education system, that is able to develop humanity by bringing humanity into the curriculum and, ceasing to take the knowledge of the IPs for granted. It goes without saying that, any intent to transform the curriculum would have to be underpinned by rethinking the way in which knowledge content is produced and packaged in the curriculum. The intention of this study was to explore how the curriculum for basic education in South Africa may be revised, in order to ensure the meaningful integration of IKS into the curriculum. The following issue to follow will be about the conditions of the integration of IKS into the curriculum for basic education in South Africa.

5.1.3 The Conditions for the Integration of IKS into the Curriculum for Basic Education in South Africa.

The issue raised about the conditions for the integration of IKS into the curriculum, goes to the heart of the transformation intent of the curriculum, in terms of which the following concepts must be addressed in the process of a meaningful integration of IKS into the curriculum for basic education in South Africa.

- transformation of knowledge production paradigms to a comprehensive “intellectual revolution” as termed by Maxwell (1984), change of the codes of power in the epistemology by changing the constitutive rules of the knowledge production and processing.
- transdisciplinary approach should constitute the core of the curriculum package whereby learning strategies are connected to the lived experience of the identity of the learner.
- reaching out to the community by rehumanising Bruner (1990) their lived experiences of everyday life based on the meaning and making process of the acquired meaning to make change.
- accepting diversity in knowledge’s by utilising the local communities’ knowledge as legitimate
- freedom from eschewed understanding of the “universal”.

The issues raised above may be realised only by sharing of the ‘gift of Africa’ with humanity. In this case, this refers to the humaneness that must first display groundedness with intent in the new epistemology that would, henceforth be referred as the “epistemology of hope”, in relation to

a future that is built on justice and fairness in respect of global human issues. In this context, it is worth noting the following words of Richards (2010): “humanising the academy is transformed by the integration of IKS and consequent re-signifying of modern institutions”⁵ – this does not leave the integration of IKS in the curriculum for basic education behind. The said epistemology of hope, cannot be realised by indigenous people alone, they need to be engaged in an enterprise of a dialogue with “informed parties” which, in this case, are the elders. The dialogue with the elders would be for an exchange of common understanding, equal views and response in the rethinking the IKS content, which continues to be short-changed in the repetitive reviews of the curriculum for basic education in South Africa.

The enterprise referred to above is in line with the aim of this study which argued for the integration of IKS into the curriculum for basic education in South Africa so that the shape of the new curriculum may be that of an integrated curriculum that is culturally responsive to the needs and aspirations of the local communities. In support of this notion, South Africa could also tap on the use of lessons learnt from the international model of Canada’s culturally responsive curriculum, which has been depicted as the model of the Alaskan model of a culturally responsive curriculum as depicted in figure 4 below.



Figure 4: The Alaskan Curriculum: a culturally responsive curriculum

Indigenous people are defined by their culture. Most people outside the culture recognise certain aspects of the Indigenous people. Those aspects are the tip of the iceberg. There is so much deep knowledge embedded in a culture that, does not appear on the surface. (This model was developed by the Lower Kuskokwim School District, Drabek, (2012)

The example of the Alaskan culturally responsive curriculum above forms the basis of the critical analysis of the nature of the current content of curriculum for basic education in South Africa, referred as CAPS which, has decontextualised the learning process in South Africa in such a way that it is irrelevant and, not useful in providing information that may enable example of individual learners to evaluate themselves and their understanding of contexts and their worldview. It becomes clear that the nature of CAPS, in juxtaposition to the example of the Alaskan model of a culturally responsive curriculum, only scratches the surface of an ideal integrated curriculum which integrates IKS.

For example, I have observed when I visit schools for community engagements projects that, for many teachers in the South African schools, indigenous knowledge's understanding is still limited to games such as 'morabaraba' (a board game played with a dice), Kgati (rope or any kind of material joined for skipping exercise used primarily by girls); 'u kugita no kugiya; go kokotlela le meropa' (cultural dancing and drumming, soft arts, such as stick fighting for boys and younger men who are initiates from traditional initiation school, 'Moaparo wa ditso tse di farologaneng le dijo tsa tlhologo' (traditional dressing and traditional food such as 'mopane' (tree worms rich in protein found in Limpopo province) 'mala-mogodu' (intestines and tripe) meat; 'dikgobe' (corn – white or yellow) 'Mqusho' (Xhosa traditional dish of white corn mixed with brown beans to make samp) and 'mabele' (sorgum which may be cooked as porridge or brewed for traditional beer known as 'umxomboti' in isiXhosa.

The aspects relating to the limited understanding of many of South African teachers of CAPS mentioned above reflect the 'soft culture' content of an indigenous integrated curriculum which, in the Alaskan culture, is equated to the surface of the "ice-berg" which covers aspects of folklore such as, (fine arts, drumming, cooking, games, story-telling, dress, subsistence and dancing). According to the Alaskan culturally reflective curriculum, an ice-berg's middle part represents a 'sea' of deep content such as climate change, medicinal knowledge, navigation and hunting skills, astrology and husbandry. These are identified aspects of "deep culture" content that warrants deep conversations that will steer the process of recreating not only the process of the individual learner, but also the context in which learning takes place. Deep conversations on "deep culture" should not be left to chance or to the teachers' various interpretations of the implementation of the IKS integrated curriculum. Reference to the example of the Alaskan model of a culturally responsive curriculum shows that, CAPS only scratches the surface of an ideal curriculum that

values the integration of IK, in such a way that penetrates the “bottom of the ice-berg”. The question that begs to be asked could then be what then is the suggestion for an ideal IK integrated curriculum in South Africa? This question is engaged in the section that introduces the suggested model of an IKS integrated curriculum for basic education in South Africa.

5.1.4 Challenges experienced by Canada in the process of curriculum transformation

Despite references that have been made to Canada’s model of a culturally responsive curriculum, Canada, like any other country that is struggling to ensure that the rights of the IPs are recognised, has also experienced challenges. In an attempt to conscientise its other interested parties in the recognition and acknowledgement of IKS, Canada has had to adopt an approach which does not restrict the education system to the indigenous assimilation approach exemplified in the former colonial education policies. Battiste and Barman ((995), in Swayze (2007:10), indicate that the greatest challenge is to find a respectful way in which to compare Eurocentric and indigenous ways of knowing and include both in contemporary modern education. This suggests that both knowledges, Western and indigenous, will need each other in these critical times in which we all live and in which we are all in need of a sustainable future to save the world from further catastrophes. This view became the basis of the model of a culturally responsive curriculum in Canada. This was also noted by Aikenhead (1997, p.2), on strengthening IL’s self-identities as they learn to master and critique Western scientific, technological and mathematical ways of knowing. The strengthening of IL’s identities should be conducted without, in the process, sacrificing their own culturally constructed ways of knowing. This view by Aikenhead (1997) is a call to avoid tokenism, indoctrination, and neo-colonialism so that the IL are capacitated to learn in both worlds, that is, ‘indigenous’ and ‘western’. The capacity building for indigenous learning can take the form of nurturing also non-indigenous learners’ understanding of IK held by Aboriginal communities as highlighted in the Saskatchewan Learning, (2005: 6-7).

The argument above relates to the issue of context in the curriculum that is relevant to the cultural milieu of the learner, which has been exemplified by means of a diagram below that depicts learning that is connected to the learner’s cultural background.

5.1.4.1 Culturally connected curriculum (CCC).



Figure 5: Culturally Connected Curriculum (Adapted from <http://progressiveeducation.us/posts/rethinking-urban-educantion-welcoming-culturally-responsive-classrooms>)

This diagram above, Figure 5, is an illustration of teachers' understanding of the learners' context of learning that, relates to the connection between the teachers, the learners, the curricula, the learners' families and communities, the local environment and the various strategies of teaching and assessment that take into account the individuality of learners in their learning. In other words, it implies a holistic approach to learning which takes the learner's context as the core of meaningful teaching and learning as, such, it is about learning and its connectedness to the learner's worldview.

The concept of a culturally connected curriculum highlights the issue of "globalisation", [globalisation refers to the simultaneity of universalising (global) and particularising tendencies, Robertson, (1995) in Van Hellefont, E, Densley, J.A (2018)] which defines the notion of IKS integration into the curriculum as a move to "close" the IL's outlook of the world in terms of which they will have to "go steps backwards" to understand the world. This is because the debates in

favour of the acknowledgement of IK have been equated to retrogression to antiquity while the world is moving forward in the name of progress. The integration of IKS into the curriculum for basic education as located within the context of the IL's worldview, prepares the IL for the macro concept of globalisation by means of introducing the learners to their immediate environment, namely, the local environment, and then to the national environment and, eventually, the international environment in order to give them a competitive edge in the world. The preparation for the global competitiveness of the IL takes a village, as is articulated in the African adage that it takes a village to educate a child. The diagram below maybe interpreted to mean that teaching an IL within the context of responsive teaching does not necessarily prepare a "closed" learner with a narrow minded approach to the broader world picture and instead it would imply that, learners who commenced their learning in relation to their local environment first then become immersed in a solid learning development approach that will capacitate them to meet the challenges of the global arena.

It is worth noting that the acknowledgement of the convergence between indigenous and Western knowledge is demonstrated practically in the majority of regions in Canada, whereby the elders are included in the models for a culturally responsive curriculum in accordance with the assertion of Swayze (2007, p.11), that the elders have a socio-culturally grounded role to play in guiding, advising and supervising the younger generations based on both their "traditional" knowledge and their understanding of "modern" knowledge (Western Canadian Protocol for Collaboration in Basic Education, 2000).

Furthermore, the involvement of the elders in curriculum development for sustainability in Canada is viewed in a very serious light tapping, in line with Swayze's (2007, p. 27) that, when involving the elders in education planning, it is important that they should not be viewed as merely decorative or symbolic. Instead, they must be acknowledged as leaders, deeply entrenched in the educational foundations and also as the repositories of traditional knowledge and the managers of indigenous knowledge systems. In addition, they should be seen as, the authorities of their communities' stakeholders in developing culturally relevant science curricula (Aikenhead, (2006); ANKN, (2004a); Inuit Subject Advisory Committee, (1996); Kawagley et al., (1998); McKinley, (1996); Riggs, (2005); Sutherland & Tays, (2004)). The issue of the tokenism of the elders in the integration of IKS into the curriculum stands out as a critical aspect in transformation of education issues, which must not to be ignored as has been the case in other countries such as South Africa. In such countries the inclusion of indigenous knowledge holders (IKH) is still a debatable issue with knowledge production continuing to be perceived as the prerogative of intellectuals in their ivory towers or tested in the laboratories instead of actualising the so-called "third leg" (community engagement) in the universities' restructuring in their process of

transforming the higher education institutions of knowledge. The question then arises as the role of the theories mentioned in chapter 3 in the cases of South Africa and Canada.

5.2. Implication of new emerging concepts for the South African and Canadian cases

The argument about the implication of the new emerging concepts for development education cannot be related to restorative justice in both South Africa and Canada, without highlighting the fact that these new concepts may not be problem free, unless the IPs who are looking forward to reconciliation gear themselves strategically in their move forward to a new dawn of alternative worldviews. It was felt that would be appropriate to start the brief discussion with the following citation as a precursor to the argument:

This is no matter for the philosophy classroom. We face the possible extinction of life on our planet. If we can, we must grasp the bias and limitation of the “West’s” worldview, powered by a hegemony that makes us oblivious to the wisdom of the people of America’s First Nations (cited in Four Arrows, (2006, p.iii).

Grasping the biases and detecting the limitation of the West’s worldview that is motivated by hegemony, will only be actualised when people start to unlearn the language of conquest. This would in all likelihood, require posing questions relating to what people understand about the nature of the commons or how the notion of the commons is paramount in indigenous worldviews to assess their accuracy. The probing method of questioning in relation to the commons, and how various technologies are undermining the intergenerational knowledge, that is, the indigenous knowledge, that may help people to live sustainable lives that are less destructive to the environment should, lead people to the realisation of the power of the hegemony that is continuing to obliterate the wisdom of the IK.

People around the world are being affected by global warming as a major catastrophe to natural resources, for example, reductions in the production of staple crops such as rice and other cultural developments that are contributing to the depletion of the world’s fisheries, a continuing scarcity of clean water, the proliferation of deserts and the degradation of the soil quality for farming. These are stark realities that may lead people to question, for the first time, the long-held myth that, the ongoing technological advancement offers the best guarantee for human development in terms of material security and overall well-being. Unlearning the language of conquest which, among other, is manifesting itself in the scientific and technological advancement which are hindering us from addressing the influences that, according to Chet Bowers in Four Arrows (2006, p. 181), are silencing the important narrative in which we should all be engaged in, particularly the college students, on the topics that may reverse the trends that are placing us all at risk.

Chet Bowers in *Four Arrows* (2006, pp. 181–182), highlights the limited perspectives on the eco-management approach in the environmental arena as reflected in the social sciences and humanities, with particular reference to the popular literature and media that are failing to introduce people to the IKS, in terms of which their origins may be traced back to the origins of humankind when the IK holders were living in an interconnected nature with the earth's natural resources. This consciousness of unlearning the language of conquest highlights the fact that, in our attempts to reconcile education, we should not lose sight of knowing the language of the conquerors, process that may lead us to embark on a transformative journey of the curriculum that is still assimilative and exclusive of other people who are indigenous.

Any research on indigenous communities in post-colonial period or post-apartheid period should be a project involving therapeutic educational process of healing of the relationships within and, among the indigenous communities so as to restore a balance in these relationships and, not repeat the hegemonic authority over people who are not indigenous and, as aptly described by Battiste (2013, p. 108), and to draw on the positive and enriched aspects of their lives (IPs) and their teachings that have been marginalised through the cognitive, imperialistic, English language education to which they have been subjected.

It is a reality that education today has become dominated by the concepts of market liberalism. In unlearning these concepts, critical reflection and traditional indigenous wisdom may be applied to question current state of affairs that has held the commons to ransom with regard to issues that have come to undermine the commons such as Western science, technology and liberal policies. The language of modernisation and progress and other approaches to knowledge such as the indigenous approaches, would be ideal means for the traditions of local democracy. These traditions, may be used to examine the enclosure of the commons by, applying indigenous wisdom to question the current state of affairs with regard to questions on, among others, how the enclosure of the commons is undermining the conservation of biodiversity, how the West has been legitimated to enclose the commons, and how modernisation and progress reproduce the patterns of thinking that further the expansion of the industrial culture that is undermining the commons? (Chet Bowers in *Four Arrows* (2006, pp. 182–184).

The issue of unlearning the language of the conquest has resulted in both South Africa and Canada and other countries with significant number of IPs being, in the position in which they are today, in terms of the gullibility in relation to any form of knowledge presented from the Western perspective. This argument reminds me of my secondary education school days in the 1970s when we used to engage in debates on popular topics such as “a pen is mightier than a sword” and “Western civilization has brought about technological advancement. When the kind of these two topics are taken at face value, they appear to be value free but, when they are unpacked

with an inquiry mind, the realisation dawns that they have deep connotations of channelling the nations in the Southern hemisphere (in this case in relation to my experience as a student in the Southern hemisphere at that time) to resorting to peaceful means of resolving conflicts, while their counterparts in the Northern hemisphere are devising weapons of “mass destruction” that may wipe out humanity in an instant. The implication of the scenario above maybe that, the southern hemisphere nations were made to believe that they can only solve the world problems by peaceful means of negotiating with a “pen” which represents, (Round table discussion which maybe peaceful), while their counterparts in the Northern hemisphere were conniving in using the “sword”, which represents, (Violent means with no discussion) weapons like atomic bombs which are a result of technological advancement and, that could destroy humanity in a second.

The same connotation maybe applied to the second topic on the technological advance by Western civilisation, which implies that technological advancement is equal to Western civilisation. If this language is unlearned, we will come to realise that some of the words coined by the conquerors such as the “pen” and “technology”, have been crafted by the West with a hidden agenda of subjugation in mind, and then exported to the so-called developing nations through the education systems of the West. It is, thus, essential that such words are unlearned in order to challenge the myth that technology is merely a harmless tool for modern advancement. The issues raised reflect very critical issues that have created the mounting problems in the world today, all, through the hidden agendas in the “language of conquest” and affecting both the indigenous and non-IPs. These problems will be addressed only by unlearning the language of conquest by resuscitating the wisdom that is inherent in IKS and integrating this wisdom in the curriculum to avoid the illusions of education, media, politics and public discourse that have negated IKS for too long to the detriment of the world.

5.2.1. Meaning of emerging concepts of SARChI-DE for South Africa’s and Canada’s Cases

As mentioned in the conclusion to chapter two that, acknowledgement of the emerging concepts, as framed by SARChI-DE, may be a necessary precondition for restorative justice, rather than the punitive justice which will stall all attempts towards reconciliation in education in countries such as Canada and South Africa. There is a conviction in Canada and South Africa and in other countries elsewhere that truth and reconciliation represents the best approach to addressing the injustices of the past colonial legacies. This is, within the background of restorative justice as opposed to punitive justice which is a deterrent of social reconciliation or healing. This conviction which is pro the Truth and Reconciliation Commissions in Canada, South Africa and elsewhere is nevertheless negated by international lawyers as argued in Llewellyn and Howse (1999, p. 358), as an easy compromise with justice with regard to lack to prosecute and punish crimes

against humanity. This is an argument way beyond the scope of this study and may need its own project to analyse its relevance regarding the impact of the TRC's education in Canada, South Africa or elsewhere.

5.3. Transdisciplinarity

This concept relates to the issue of addressing world problems by different or multiple disciplines to address the intractable problems which are facing the world today. This reference to the transdisciplinary approach to solving the world's problems highlights the fact that it is not possible for problems of whatever nature to be solved by relying on one trumpeted worldview alone. The reliance on monoknowledge, as is the case in the world today, in the form of the heavy reliance on Western knowledge alone has proved to be a failure. The failure of the capacity of Western knowledges to solve the recurring world problems is a sign that, there is a need for a different paradigm that may change the way in which knowledge is produced and disseminated. The suggested new paradigm may play a meaningful role in addressing the issues that are puzzling the world, such as global warming and food security. As outlined earlier in this chapter, the list is endless. Reference has also been made to Judge (1994-1995) for a comprehensive list of the intractable problems facing the world.

An alternative approach to addressing IPs rights issue that has been identified is that of indigenous diplomacy (ID) which was used in Canada. This approach represents a further aspect of the new concept of CC which emerged from the collaborative work between scholars in Canada itself and beyond in Australia, Aotearoa New Zealand and the United States, by means of the construction of multiple critiques of the modern discourses based on the multidisciplinary foundations in the current system. This approach to transformation in multiple sites has illustrated that multiple sites require multiple strategies to address diverse problems. This has been echoed by Graham Smith in Smith (2000), who asserted that it is not possible to find solutions to problems using a one-way approach but that multiple ways should be used, including academic analyses and research; political activism, resistance, lobbying, positions and also self-reflection by indigenous people on the oppressive situations that they have come to accept as the norm. Some of the practical examples of such self-reflection programmes are youth programmes such as the Reality Education and Applied Life Skills (R.E.A.L) School, which is a programme of innovation and positive change which applies the latest research and draws on the most recent discoveries from the quantum sciences and cellular biology programme design for leadership development.

I had an opportunity to observe the interaction of R.E.A.L during the World IPs Conference on Education (WIPCE), 2017 in Canada from 24 to July, 201. R.E.A.L is one of Canada's Indigenous education initiatives for both the young and old and comprises both national and international initiatives aimed at creating a different future by introducing the participants to diverse and varied perspectives. I learned from this programme through the quantum sciences explanation how the

human body is a highly developed system comprising various fields of energy and electro-magnetic charges and how this energy may be used to change negative energy charges into positive charges through using the power of breath, (www.getrealschool.com). It is hoped that the courses offered will help the participants to transform how they hold and perceive their life experiences by introducing and exposing them to diverse and varied perspectives of the world. These are some of the lessons that Canada could share with South Africa in advancing the course of education for reconciliation as such lessons would relate to both blacks and whites in South Africa based on the diverse and varied cultural perspectives in our country.

5.4 African Perspective “first”

The African perspective is an analytical lens that may promote an understanding of the issues facing Africa as a continent from the position of Africans who need to understand themselves first in their own terms of definition, before “rushing” to define the world in the foreign terms which have resulted in Africa becoming the “hyena” which it originally came to be. Once this hurdle has been overcome Africa should form a new dimension with propositions for action that were not possible under the old Western point of view.

The African perspective concept may be linked to the Canadian concept of generating an ethical space for decolonisation. This was framed by Battiste (2013, p.104-108) and speaks to the organisation of the modern curriculum which is sanctioned by the state in terms of *what* counts as knowledge, *what* content to teach and *how* to teach it. This is the *modus operandi* of the state's establishment of one main stream, a culturally imperialistic stream that marginalises the other ways of knowing accumulated by groups such as groups of IPs. These state curricular oppressive strategies (COS) operate in the human science curricula and the way in which these curricula have been socially constructed, including the issues of power, status, legitimisation, racism, hierarchy, and normativity. This is one of the critical issues which policy designers must know when learning the language of conquest and its worldview, which were used in pre-packaging the state's curricula so that they may unlearn this language of conquest that represents worldview that is foreign to the various worldviews and realities in which the students operate, especially in countries such as Canada and South Africa where the students are from diverse groups and represent a variety of experiences, traditions, histories and knowledge's.

Based on the above, this would mean that the policy designers for learners from diverse background, such as those in South Africa and Canada, as alluded to above, should select curricular knowledge that encompasses the issues of hegemony. The selection of such salient features in the curricula for diverse learners takes into consideration questions about *whose* knowledge is included, *whose* languages are considered to be legitimate vehicles for carrying

knowledge, *who* are the people who took the included decisions, *how* have their choices been made, and *what* governed those choices?

These types of questions directed at curriculum designers would engage them with the issue of critical inquiry relating to the hierarchy of power embedded in society, and also how the concepts of antiracist, anti-oppressive education may be included so as to expose them to all students, both indigenous and non-indigenous. This approach by curricular designers would ensure an ideal generation of an ethical space or, as in the words of Ermine (2007), cited in Battiste, (2013, p. 105), “in-between space” – a concept that denotes the creation of a space where indigenous and Western thought are brought together not to merge or clash but to create a space that is new and challenging but, ultimately, with the potential to generate an earnest dialogue on the assumptions, values and interests that each hold with regard to pressing issues facing both indigenous and non-indigenous people. This, then, is the way in which the concept of the integration of IKS into the curriculum for basic education in South Africa may be conceived as would be reflected in the model suggested by the researcher.

5.5 AFRIKO-CONTINUUM CURRICULUM

I will now provide a brief background to my choice of concepts in suggesting the anticipated model of an IKS integrated curriculum for basic education in South Africa.

The aspiration of every society in the 21st century is to become sustainable in its education system. This may, however, be realised means of a curriculum which is the vehicle of development of every society. The curriculum’s ultimate purpose is to promote an education that serves the needs of the society in question. It is for this reason, among others, that the role of education was outlined by the United Nations’ United Nations Decade of Education for Sustainable Development (2005-2014), in its vision for an education that will ensure sustainability to conscientise nations on the role that education is anticipated to play in the realisation of sustainability in education.

An outline of the services of education to every society can mentioned as follows: The goal of education is to make people wiser, more knowledgeable, better informed, ethical, responsible, critical and capable of ongoing learn. Were all people to possess such abilities and qualities, however, the world’s problems would not be automatically solved although the means and the will to address these problems would be at hand. Education also serves society by providing a critical reflection on the world, especially its failings and injustices, and by promoting greater consciousness and awareness, exploring new visions and concepts, and inventing new techniques and tools.

Education is also the means for disseminating knowledge and developing skills, for bringing about desired changes in behaviours, values and lifestyles, and for promoting public support for the continuing and fundamental changes that will be required if humanity is to alter its course, leaving the familiar path that is leading towards growing difficulties and possible catastrophe, and starting the uphill climb towards sustainability. Education is humanity's only hope and most effective means in the quest to achieve the sustainable development as articulated by the UN Educational, Scientific and Cultural Organisation (1997, Article 37, p 64)

This anticipated global vision of the UN on “education for the sustainable future” may be realised only in the light of an alternative view on education which involves creating a space for new forms of interpreting education, that is, introducing “new” but “basic” forms of knowledge as rooted in Afrikology which have the power to “open” the learners’ eyes to the stereotypes in education systems that have suppressed their critical outlook and questioning instances where education has been used as a hegemonic tool to control the needs and aspirations of the communities that have been limited in their view of education as preparing the learners for “work” and nothing more. Hegemonic tools in school structures perpetuate the unequal power relations whereby the curricula fail to acknowledge local Indigenous communities and override local knowledge, values and beliefs.

The integration of IKS into the curriculum for basic education will release the education systems of the developing countries from the hegemony of modern science and the monopoly of Western scientific knowledge which has reduced the education of the indigenous learners to the mechanistic view of the world as was illustrated in chapter 3 by the metaphor of the “mechanistic trapped bird” in figure. This mechanistic view of the world may be seen as a concept that is taking the world “backwards”, that is, with the reference to the Newtonian view of Physics in the 1920s. Capra (1982, p. xviii, cited in Atkin, (2005, p. 2), warned: “Like the crisis of Physics in the 1920s, it derives from the fact that we are trying to apply the concepts of an outdated world view to a reality that can no longer be understood in terms of those concepts.”

Capra's warning above cautions any country which is reforming its education system in the 21st century for sustainable development (SD) to be cautious of not backtracking the process of sustainable development to those “illusory” times of the 1920s with the mechanistic world view that were out of touch with reality and based on the holism of knowledge that exclude us as human beings from nature. This suggests that, forever society to work towards education for sustainability (ES), a holistic curriculum that includes humanity would be a viable approach towards sustainable development. IKS mainstreamed through Afrikology would be able to provide a way out the morass of the mechanistic view of the fragmentation of knowledge separating us from ourselves and our environment – a situation that has led to social, ecological and cultural crises around the world.

An Afriko-continuum curriculum is a concept that I crafted to depict the metaphor of a continuing nodal points flow of knowledge as it develops according to the structure of the curriculum of basic education from the foundation level (FL) to the intermediate (IL) and senior levels (SL), and then onto Further Education and Training (FET) as in the case of the South African education system. In the anticipated model depicted below, the projected focus is on grades R-3. In my opinion children at this stage may be likened to trees which, in the African adage, maybe embedded as “Legong le ojwa le sale metsi”, translated as bending the tree in a desired pattern while it is still pliable as it would break if one tried to bend when it is already fully grown or hard.

5.5.1 MODEL OF AN AFRIKO-CONTINUUM CURRICULUM

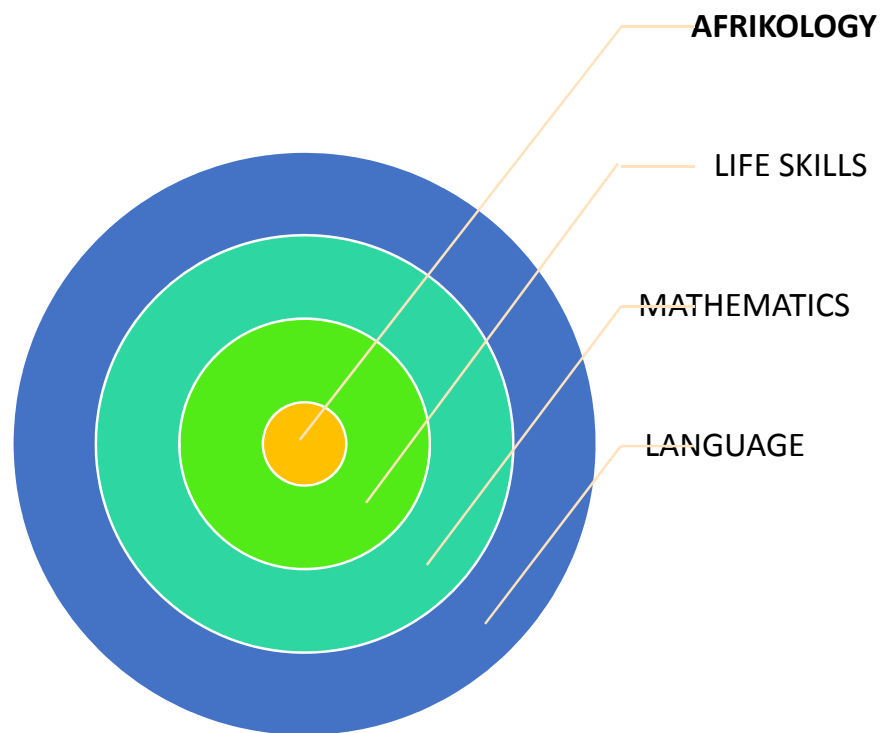


Figure 6: Model of an Afriko-Continuum Curriculum

➤ The circular lines

The circular lines in the diagram depict both the point of origin of knowledge as AfrikoLOGY as the “heart of knowledges” and also how other knowledges developed from AfrikoLOGY. These ancient African knowledge systems have been divorced from the rest of the world in spite of all the rich knowledge and resources that have sustained the IPs on the African continent. This assertion is

supported by Hegel (1997), in his *Geographical basis of world history*, as cited by Eze, (1997), wherein he described Africa as a frozen region of the universe, insulated from many forms of progress:

From the earliest historical times, Africa has remained cut off from all contacts with the rest of the world; it is the land of gold, forever pressing in upon itself, and the land of childhood, removed from the light of self-conscious history and wrapped in the dark mantle of night. (Eze, (1997, p.124)

This view was echoed by Trevor-Rope (1963, cited in Depelchin, 2005) by means of reproducing Hegel's denial of Africa's worth in world history when he claimed that, "perhaps, in the future, there will be some African history to teach. But, at the present, there is none: there is only the history of Europeans in Africa" Depelchin, (2005, p. 13). Afrikology, through the authentication of IKS integration into the curriculum for basic education, may salvage Africa from such Western condescending discourses on the continent.

The format of the diagram replicates the way in which the process of transformation of education in South Africa may unfold in a meaningful way by rotating the subjects at the foundation phase of basic education in South Africa around Afrikology as the theme for every subject relevant to this phase. The subjects are as follows: -

➤ **Life skills (Beginning of knowledge, Arts and Crafts, Physical Education and Health Education)**

Life skills is a process of holistic development throughout childhood. Children are equipped with the knowledge, practical skills and values that will assist them to realise their full physical, intellectual, personal, emotional and social potential. This process may be introduced to children through storytelling, or songs that relate to life in the olden times. An art may be introduced using an indigenous language, for example, Xitsonga where the teacher may start the lesson by preparing the learners for attention by uttering this phrase "Garingani wa garingani" to which the learners will respond by saying "Gaingani". The introduction is repeated twice and once the learners' attention has been gained, the teacher will now say "Khale ka khaleni". The same concept may be illustrated in Setswana by saying "Gatwe e rile", "Bogologolo tala" or "Kgale le kgale". Loosely translated, this would mean, "In the beginning of time human beings thrived on this and that or survived on natural resources like berries, redish, bulbs etc., for their food. This is a holistic approach to introducing knowledge that uses a transdisciplinary approach whereby more than one discipline is related to, for example, immediately one refers to time one introduces a concept of time, which is historical and which is a crucial aspect of the

transformation of education for cultural freedom and which needs to occupy a significant space in the curriculum.

The how of the survival of human beings may be seen in the light of knowledge, technological science to produce food, hunting skills, environmental knowledge taking care of the earth or soil and living together in a communal relationship because, as it is, human beings need each other order to survive. In South Africa these are pressing issues in the curriculum for basic education at the foundation level so that children are taught from an early learning stage that knowledge is not solely the domain of European peoples but it is also the domain of IPs and also that the knowledge of the latter is not confined to traditional dances, weaving baskets and beads only but, instead, it is about serious issues that relate to life and death. The introduction of life skills as a subject in the foundation phase plays a lifelong role of encouraging learners to be inquisitive and to develop an enquiring mind to ensure that they acquire and practise the life skills that will equip them both to become independent and effective in responding to life's challenges and to learn to play an active role in society. Learning life skills as a subject is an interrelated study of Personal and Social We-being, Physical Education and Creative Arts. The learner, as a social being, is being made aware of the fact that he/she is part of a society that may physically and collectively create a life skill for the survival of the community.

➤ **Language**

Language represents the cornerstone of mapping Afrikology as the nucleus of all the knowledges of the world. It was through language that Africa, as a cradle of humankind, was falsified and written in a so-called "scientific language" which became, until today, a "tower of Babel" in most postcolonial education systems. In relation to the said tower of Babel, Nabudere (2006, p. 20; 2011, pp 17-18), posits that, "Afrikology must proceed the proposition that it is a true philosophy of knowledge and wisdom based on African cosmologies because it is Afri- in that it is inspired by the ideas originally produced from the cradle of humankind located in Africa". It is not Afrikology because it is African but it is Afri- because it emanates from the source of the universal system of knowledge in Africa.

The concept of wholeness in Afrikology tries to answer these questions about the creation of knowledge by tracing the issue of epistemology to the Cradle of Humanity in Africa. In an attempt to restore sanity from the tower of Babel concept, Afrikology as viewed from the centre, it establishes a basis for holistic and integrated ways of knowledge production that makes it possible to interface scientific knowledge with other forms of knowledge. In this way Afrikology responds to the crisis created by the fragmentation of knowledge

through existing academic disciplines. Afrikology therefore advances transdisciplinarity in this case, to a level where it attains a coherent basis for interacting with Afrikology as an epistemology, which returns wholeness to understanding and knowledge production.

It is therefore, only fair to suggest that the stories of “Afrika” be for once, be told in their ways, in this way Africa, will liberate herself from the language and cultural imperialism imposed by the colonial masters. My suggestion is that indigenous languages should be made compulsory languages of teaching and learning (LOLT) during FL, not as a matter of returning to antiquity but as a matter of entering into a hermeneutic circle, which refers to the understanding of the constituent parts of the whole. This argument brings to light the interpretation of African languages and IKS with reference to foreign theoretical frameworks and which is to lose sight of the hermeneutic circle curriculum as referred to in (Nabudere, 2011).

The hermeneutic circle is an antithesis to the conventional norm of post-colonial education systems in Africa, in particular of using one particular worldview as the only point of departure to knowledge production and with the total exclusion of the knowledge and languages of the IPs. Language, as the “logos” (the living nature of language in indigenous African thought) in Afrikology, is key to rethinking the contributions of IPs to knowledge into the curriculum. This should be conducted in indigenous languages (IL) so that a foundation is laid for children at an early stage of their cognitive development – like the “tree that has been modelled while still pliable” – to dream, to laugh, and to cry from their indigenous worldview. In this way, Nabudere (2011, p.90) posits that it is through language, including living language or orality, ‘that humanity can dialogue with one another and come to a consensus about a new future’. It is for this reason that the indigenous languages should be developed to a level at which they may function as the LOLT, even up to higher levels of education and not in the foundation phase of the basic education in South Africa only. It is only in this way that, borrowing from Mamdani’s view (cited in Zeleza 2006, p. 21); we will be able to say that we have removed the ‘linguistic curtain’.

➤ **Mathematics**

Research in South Africa has shown that the acquisition of Mathematics at the foundation level is a compounding challenge. The ongoing research by the Centre for Development and Enterprise (CDE) since 2004 has painted a distressing picture of the output of Mathematics in the country. The emphasis of the measurement of the country’s educational status has been on mathematics and science as they are regarded as key subjects that open up possibilities for entry into higher education and, in addition, they are also critical competencies in the development of most sought after, high-level skills. In the

main, mathematics and science are viewed as being important for job creation, economic growth and the full development of national capacities. This is, in fact, the reason why the government of South Africa has launched of an important strategic initiatives and policy changes aimed at improving the quality of the teaching and learning in public schooling with one of these strategies for quality improvement focusing primarily on mathematics and science. These improvement strategies led to the Department of Basic Education (DBE) launching its Action Plan 2014 in 2014, Centre for Development and Enterprise(CDE), (2014, pp. 4; 26) with the aim of strengthening the education system through the achievement of a range of short-term measurable outcomes by 2014 as a basis for longer-term school improvement by 2025.

In the discussion above language emerged as the subject of contention as a critical aspect of reclaiming identity and the interpretation of knowledge. It is important that this critical nature of language is always emphasised in view of the crucial relationship between a child's acquisition of language in his/her early years and his/her ability to learn. This implies that, if either teachers or learners were not proficient in the LOLT, this would impact adversely on learning in Grades 1 to 3. In South Africa, the LOLT for the teaching of mathematics in the foundation phase is in the learners' home language until the first year of the intermediate phase where the switch is made from a learner's home language to a different LOLT, preferably, English or Afrikaans. Suffice it to say, this the transition is, in the main, extremely difficult.

Emanating from the above, it can furthermore be indicated that a number of schools in South Africa have opted for the early transition to English or Afrikaans with the transition sometimes taking place as early as Grade 1 NEEDU, (2013); Taylor, S &

Coetzee, 2013 in CDE 2014, p. 16). This early transition is often justifiable in public schools in townships such as Soweto, where there is a diversity of African languages spoken and the most viable LOLT option being English as it is often difficult for a school to decide which home language to choose as the LOLT. This clearly indicates that the teachers are the drivers of the teaching of mathematics in a meaningful way. However, when the teachers have been trained in the Western model of teaching mathematics, it is usually extremely difficult for them to conceive of any method of teaching mathematics other than the Western way. The question, thus, arises as to how South Africa may acknowledge mathematics from an IKS perspective in the curriculum for basic education.

This question refers to the argument earlier in this study on the learning of the language of conquest. The language of conquest, in as far as the learning and teaching of mathematics in Africa and South Africa, in particular, has been about measurement to the total exclusion of nature and humanity (Cajete,2000; Gingras, 2001). This type of approach legitimates the status of

mathematics as a private science, accessible only to those with a flair for figures. It is, thus, vital that this type of language of conquest in mathematics is rethought by means of the foundational principles of African philosophy of education that may draw on Afrikology which highlights the concept of land-based education (LBE) and how participative spaces are created on the land to allow children to emerge or mature independently out of a sequence of developmental tasks into the next sequence. When land is available, the children are given the opportunity to show competences in the geometrical shape and trigonometry in clay model houses construction with the construction of components of a house being done separately on the ground and then assembled together.

The finished products of the components of these model houses are then fitted together as proof that the architectural level of thinking has been well developed and that the sophisticated mathematical involvement has been mastered. These examples are not suggesting that the measurement and counting as mathematics as introduced in schools is the wrong approach but it is being suggested that they may be introduced using a generative approach at an early age through games, folklore and rhymes, and the counting and calculating of local produce. These generative approaches to teaching mathematics at the foundation level should be incorporated into curriculum that is land based as was the case with the Sami of the Northern Europe where land is important for the IPs and this importance is ingrained from the elementary years of schooling through to high school and university (testimony by members of the World Indigenous National University (WINU) at WIPCE 2017). This affordability of land may serve as a living laboratory to afford children the opportunity to generate mathematical concepts in their own terms on which they may then build as they mature in the interests of lifelong learning (LL).

The rotation images in the diagram above depict the argument on the teaching of mathematics using a generative teaching approach. However, this is possible only if children are immersed in these concepts at an early age of learning otherwise the reverse of the Africa adage of trying to bend the tree when it is already hard will be realised with the “hard tree breaking when one tries to bend it”. This highlights the reality that attempts to integrate IKS into the curriculum cannot start at the higher education level of education or in universities and, as this stage, it is too late to try to introduce new ideas into the curriculum because learners would already have been “tainted” with the foreign knowledge systems (FNS) that would have rendered them out of sync with their knowledge systems. An indigenous knowledge integrated into a curriculum grounded in Afrikology should aim to produce learners who are immersed in concepts that reflect critical thinking from an early age so that they grow knowing how to name the world in their own terms. This process of the redefinition of the curriculum for basic education in South Africa and its rehabilitation based on the source of all knowledge of humans, that is, Afrikology, would have to adopt a pragmatic

perspective. This pragmatic perspective may be made meaningful by following the exhaustive or open list of recommendations as suggested in the argument above in this chapter.

In order for the issues raised above to take root, it is imperative that academic institutions in Africa and in the social sciences strive to ensure the affirmation of the multiplicity of worlds and, forms of life and cultural perspectives that redefine the relationship between objectivity and representation and, that which are empowering in the questioning of the status of the scientific truth itself, referred to by Visvanathan (2001c), in Odora Hoppers (2004, p.20) as the ‘tight architectonic’. Woven together by the confluence of the ideologies of science, development and modernity have, over time, created a cognitive prison into which were cast the academic and policy communities.

The argument in favour of the integration of IKS into the curriculum for basic education in this study, may be perceived as a sensitisation to indigenous people about the “richness” of their human and knowledge capital that is inherent in IKS. This human capital maybe attained by means of a diverse, conscious, culturally responsive curriculum, that is able to elevate the human capital knowledge economy’s status to place it on an equal footing with the fiercely competitive and, unjust limited market driven world order in which we live. The Alaskan culturally responsive curriculum alluded to earlier may enable a critical analysis of both the nature of the current content of the curriculum for basic education in South Africa and CAPS which has de-contextualised the learning process in South Africa so that it has become irrelevant and not useful in providing information that may lead to individual learners evaluating themselves and their understanding of contexts and their worldview.

5.5.2 Cognitive justice as an antithesis to cognitive imperialism: Cases of

South Africa and Canada

Knowledge production is conventionally seen as the business of universities as centres of excellence. However, it would appear that universities in Africa, in particular, have failed in the course of history in their task of being centres of excellence. Universities on the African continent have not been willing to fully transform by means of tapping into ‘other’, older, but also new, forms of knowledge systems such as IKS. It would appear that they are afraid to let go of the template of the Western script of knowledge system. This is the reason why this study took a detour to discuss the roots of the education system, that is, basic education. It is my hope that the study findings will add value to the ongoing agenda for future research on the way in which an IKS integrated basic education curriculum may speak the language of juncture in the curricula of both universities and schools.

Knowledge in South Africa and Canada took its cues from Western countries, as did the curricula. This was primarily a result of the fact that curriculum development has always been the ambit of teams of experts with this tendency resulting in the views of the experts silencing other voices in the curriculum – a process best articulated by Odora Hoppers and Hountondji as “epistemological silencing” in Odora Hoppers (2002, p. vii). The question then arises as to how IKS may transform the curriculum for basic education. It is Hountondji’s (1997) view that IKS’ acknowledgement as a universal heritage and universal resource that is diverse and varied and that has the capacity to establish a link between epistemology and democracy.

These said links help in raising issues of cognitive justice as an enabler in the democratisation of the process of knowledge in the curriculum. This enabling capacity of IKS was echoed by Shiv Visvanathan, in Odora Hoppers (2002, p. viii), by positing that bringing IKS into formal education is an enabling mechanism to counter the contestation of the museumisation of the other. This argument clearly depicts the role of IKS and its effects on the curriculum by means of the transformation of the curriculum from its Western monoknowledge trap and the scientific presumption of universal knowledge.

Arguably, IKS is an epistemology of hope of a recovery from a perpetual scientifically inclined education curriculum, which has been forever closed towards other knowledge systems. The conscious nature of IKS was highlighted in the works of Paul Freire (1970, p. 33) wherein he defines conceptualisation as a “reflection and action upon the world in order to transform it”. This is the main characteristic of IKS as the only system of knowledge that may transform the curriculum by allowing an individual learner to question the nature of a historical and culturally appropriate model of education. The Canadian Alaskan model of a culturally responsive curriculum as referred to in Figure 5, earlier on in this chapter, envisages cultural responsiveness, while the Australian IPs embrace such cultural responsiveness on the praxis of the cultural interface in their education system, as do the Maori’s of Aotearoa New Zealand in the philosophy of Kaupapa Maori in their curriculum for both basic education and higher learning. It is hoped, that this type of critical consciousness of IKS will ensure that the indigenous learners’ worldview globally will also be recognised and acknowledged in the curriculum, thereby affirming the multiplicity of knowledges through cognitive justice.

Canada’s Indigenous people are still facing the challenges of a Eurocentric educational system with its educational curricula and pedagogy built on a monocultural foundation of knowledge which then benefits from public education (Battiste 1986). The conceptualisation of cognitive imperialism in Canada is associated with colonial dominance as the foundation of the thought, language, values and frames of reference as reflected in the language of instruction, curricula, discourses, texts and methods (Apple, 1982, 1997; Nicholas, 2008; Farmer, 2004, in Battiste (2013, p. 160).

This conception of cognitive imperialism has rendered the IPs powerless to such a point that they have come to accept this situation as resulting from their cultural and racial origins instead of from the power dynamics rooted in the cognitive imperialism that creates inequality in a capitalistic economy.

Cognitive imperialism is a gross human right violation, which can be redressed only by means of cognitive justice, which is a responsibility of all governments in the world towards the colonised and non-colonised. According to Dr Erica Daes, (1999) during the United Nations Working Group on IPs at the UNESCO Conference on Education, July 1999, “Meeting this responsibility is not just a problem for the colonised and the oppressed but rather the defining challenge for all peoples. It is the path to a shared and sustainable future for all peoples”. South Africa is no exception as a result of the legacy of apartheid education question, which subjected the blacks to a debased form of education that was intended to train them to be the “drawers of water and choppers of wood” for the white people in South Africa.

Arguably, IKS has the capacity to create a pathway for the reconciliation of basic concepts in knowledge production such as modern knowledge systems and African indigenous knowledge systems. IKS, as perceived in the curriculum, should inspire learners to also, see themselves in science and in the naming of the world. It is for that reason that, the knowledge that sustained the ancestors of the world’s IPs and enabled to produce food and devise the technologies that sustained even the colonisers when they first arrived in the lands they had “discovered” should be recognised and acknowledged on the same level as other knowledges and passed on to the new generations to cherish and value. Botlhale Tema (cited in Odora Hoppers, 2002, p.137) articulated this notion in relation to African learners when asserting that, accepting the African child’s lived experience into the learning situation has the positive psychological effect of integrating the child as a whole person into the learning process. This way of change in learning has everything to do with the cognitive and conceptual change from the cognitive imperialism as was elaborated upon in the Canadian case.

Cognitive justice brings with it the recognition of other knowledge systems, in this case IKS, as valid knowledges for teaching and learning. The analysis in this section has, largely illuminated an ongoing response to sub-research questions 1 and 2 in this study on the *where*, *what* and *how* of Canada and South Africa’s experiences with the integration of IKS into the curriculum for basic education.

5.5.3 Second level indigenisation (SLI): Meaning for South Africa and Canada

Indigenisation for the purpose of this study referred to the process whereby indigenous ways of knowing, being, doing and relating are integrated into the curriculum with the aim of transforming

the education system to ensure that it is reflective of the indigenous people and their knowledge systems in a holistic way. The aim of the process of indigenisation, as envisaged in this study, is to be a welcoming process which is relevant to the indigenous' learners and non-indigenous learners.

In the process of second level Indigenisation the rules of the knowledge construction game are questioned with humility but also with first acknowledging the mistakes made by colonialism, with its social theories that claimed 'terra nullius' as a justification for colonisation, and then negotiating the way forward in a positive way. The way forward should involve the recognition of indigenous cultures, civilisation, and cosmologies, such as Afrikology, thus showing the need to bring humanity back into the education system which modernity has lost. This development of SLI should move ahead with guidance based on codes created on the way in which institutions contemplate the transformation of the curriculum in a meaningful way. In South Africa the question that should be asked about the role that the parents should play in protecting their children against 'the wolf in sheep's clothing', taking into consideration that IK in South Africa has not yet been elevated to the level of being a priority in the education system.

South Africa failed to take advantage of the TRC to deal with the issue of reconciliation in the education system. Instead, the TRC dismissing the issue and focusing on political mission against the perpetrators of apartheid and atrocities against the victims which were predominantly black. Accordingly, in South Africa there are still a host of questions to be asked about indigenous people in particular. Of prime importance is the land question which is an issue that should inform policy on the recognition of IPs and their knowledge systems. In this way, the country would be able to strike a power balance and address the issue of reconciling all our differences. It is on the basis of the issues raised above that this study's call for the integration of IKS into the curriculum would be a milestone in contributing to the review of the "missing links" in the South African perspectives on reconciliation.

Emanating from the above, the issue of the truth and reconciliation comes into question for both South Africa and Canada in relation to a need analysis of the way forward. The way forward should be based on the background provided by the United Nations policies on the Rights of IPs (2007), among others. The issue of land, which is crucial in an education system that is immersed in the values of the IPs who are connected to the land. The United Nation's (1981) Permanent Forum commented the significance of the relationship between the IPs and their land as follows:

Land is the foundation of the lives and cultures of IPs all over the world. This is the reason why the protection of their right to lands, territories and natural resources is a key demand of the international IPs' movement and IPs' organisations everywhere. It is also clear that most local and national IPs' movements have emerged from struggles against policies and actions that have

undermined and discriminated against their customary land tenure and, resource management systems, expropriated their lands - their resources have also been extracted without their consent and led to their displacement and dispossession from their territories. Lack of access to land and, lack of respect for the IPs' rights over lands, territories and natural resources, aggravated the threatening conditions for the survival of the IPs' particular distinct cultures.

The issue of LBE can be addressed by making examples with reference to the Sami people's (WINU, *ibid*) regard for land in education. To the Sami people the land issue is sacred – it is all about relationship. The Sami curriculum includes the following two core subjects:

1. Sami traditional craft and applied art at Sami elementary level (Basic education in South Africa)
2. Deer husbandry from kindergarten, primary school, school, university degree and to higher degree, (Masters).

This notion of the centrality of land in the curriculum has been captured in this study in the suggested IKS integrated curriculum in which the first subject in the circular curriculum is about life skills. The subject of life skills would not be possible without the space being created in the country as a laboratory for the learners to generate all the original ideas that would be relevant to their local conditions first and then to national and international conditions.

Both South Africa and Canada share the “dark” past of an apartheid education system although in different forms of assimilation. In Canada children were removed from their parents and brainwashed under the guise of “taking the Indian out of the child” a concept analysed by Grinde, (2004) with exposure to the Western way of life by means of formal schooling that resulted in the cutting of the ties between the children and their parents, cultural values and languages. South Africa adopted a different approach with the apartheid policy of Bantu Education whereby the black learners were relegated to the Bantustans where they were able to practise their indigenous cultural values in their separate, far removed and often, dry geographical areas.

The meeting point between South Africa and Canada is their emergence from their dark past with a spirit of restorative justice as opposed to punitive justice in addressing the injustices of the past inflicted on the indigenous people in Canada and the blacks in South Africa. The goal towards restorative justice is the same in both South Africa and Canada although the means by which to achieve this goal is different. It may, thus, be said that, in respect of this difference of approach, the two countries took separate journeys but on a similar path towards reconciliation. The majority of relevant literature portrays South Africa as a torch bearer on this journey towards reconciliation and, as a result, several nations opting to take the path of reconciliation are looking to South Africa for guidance. Nevertheless, South Africa's approach to finding an amicable solution to the issue

of the apartheid perpetrators and victims has not been without criticism. For example, Llewellyn (2002) pointed out in her essay on the TRC and residential schools that:

In the process of responding to these “justice critics,” the South African TRC came to realise that justice was, indeed, the missing piece in their work and what was needed to bridge the gap they faced between finding the truth and reconciliation. It was not, however, justice of the sort the critics had in mind that the commission discerned was needed, and the justice of prosecution and punishment would not assist in their journey toward reconciliation. Instead, the commission sought restorative justice.

Restorative justice viewed through this lens may constitute an addition to the international framework that may provide a way forward in ensuring that both educators and indigenous knowledge holders as informed people who are cognisant of the constitutive rules that harness the system. This view could empower the revolutionary educators as the masters of reconciling education that bridges the perception of education as being “captured” by science as the only authority for universal truth and not one of the other knowledges. This lens could engage the nation states globally on how best to reconcile the disparities in the education systems that continue to assimilate the learners into the European cultures by marginalising IKS in their curricula. The integration of IKS into the curriculum may open up vistas for these international initiatives or instruments in education that may bring about the following:

- Full participation of IPs in the planning of the curricula
- TRC’s acknowledgement of the pluricultural nature of IPs
- TRC’s development of tactical strategies to focus on the challenges that face the rights of IPs both now and in the future
- TRC to embrace humanity on the basis that we are all citizens of this global planet
- TRC to authenticate the knowledge systems that sustained our ancestors, and for past and for future generations to articulate.

The concepts developed by SARChI-DE show that there framing of human development within a paradigm of restorative action and cognitive justice is premised on the epistemology of hope. Furthermore, SARChI-DE articulates transformation from the standpoint of SLI, thereby preventing the limits of reality to reign supreme through hope that has the ability to probe the future and, consequently, illuminates the possibilities of the present. Hope is a substance for reflecting on our present existence as not being ultimate and realising the visionary projection of an alternative epistemology that may be realised by into the IKS that have been relegated to posterity.

5.5.4 Transformation by Enlargement: Turning theories and knowledge into action

An important issue that cannot be ignored in this argument for TbE is the issue of language and culture, which form the bedrock of a culturally responsive curriculum. The relationship between culture and language is complex in that one is not of lesser importance than the other, the two complement each other. For example, it is not possible for culture to thrive or survive without language and vice versa. This argument is engaged within the confines of the conceptual framework of transformation by enlargement which relates to taking a broader view of the intractable problems that are besetting an education system that lacks transformation intention in as far as the issue of the language of learning and teaching (LOLT) is concerned.

We learn from history that, during the colonial times, the IPs were conditioned to look down on their own languages, to despise them and to equate them to low status. Ngugi wa Thiongo'o (1986) attests to this claim by referring to the colonial times when Africa learners were socialised to associate their own indigenous languages with low status, humiliation, corporal punishment, low intelligence or stupidity. This assertion also brings to mind the memories of some of us who attended school during the apartheid era in South Africa, whereby speaking in your mother tongue in the school surroundings was totally forbidden. If found communicating in your mother tongue, which was an indigenous language in our case, this resulted in harsh punishment, ranging from corporal punishment to ridicule. Such punishments have long-term effects in that they:

- Sowed the seeds of division and mistrust among peers, a tragedy that becomes a tool that the oppressor uses to divide and rule the IPs everywhere.
- created a culture of mistrust among the indigenous learners themselves as some of them were used as spies to report those who were communicating in their indigenous languages
- led to a perception that the speaking of mother tongue language, which in the case of an indigenous language, was stupid or unintelligent. This issue has been “an elephant in the room” where issues of LOLT are concerned in the former colonial countries, including South Africa.

The question arises as to the impact of such punishments on the learners' self-esteem. My own impression is that they may result in feelings of helplessness, stress, loss of identity, low-esteem, incompetence, social and economic deprivation, failure and embarrassment. As argued by Ranginui Walker, in Jenkins & Matthews (1998), this was subjection to “cultural surrender”. This was exemplified in the case of the assimilation of Maori children into Pakeha culture through the actively discouraging, the Maori language, belief systems and culture and actively promoting Pakeha belief systems and culture.

In the case of South Africa, this cultural surrender was part of the blueprint of the language policy since 1652, which intensifies with the Anglo-Boer war in 1899-1902. This language conflict between the Afrikaners and British in South Africa came to be known as “die taalstryd” and began as early as the 1870s, when some of the Dutch settlers were calling for the inclusion of Afrikaans as the common literary currency.

The cultural struggle for language as a hegemonic tool was very evident among the Afrikaners as European South African history has shown that, even when the National Party Afrikaner elite came into power in 1948, they brought with them historical baggage and a collective memory of cultural rivalry against the English. They proceeded rapidly in all areas of social life to address the social, economic and cultural gap between English-speaking white South Africa and Afrikaans-speaking white South Africa. This process included the marginalisation of the IPs’ language and culture. The process of achieving cultural and linguistic supremacy continued, more or less, uninterrupted until 1976 when the school children in the South African township of Soweto decisively rejected and revolted against the use of Afrikaans as medium of instruction in the schools.

This protest against Afrikaans as the language of instruction (LOI) under apartheid signalled a watershed in the history of apartheid fascism in South Africa. Indeed, it also announced to the wider world the coming of a new era and the end of apartheid. However, this also left a void in the issue of the language of instruction (LOI) as there was no decisive action taken as to which indigenous language should replace the former “foreign languages”, namely, Afrikaans and English. Instead, English continued to be adopted as compromise foreign language for learning and instruction (LI). It is clear that TbE should flag the issue of language and culture in the envisaged IKS integrated curriculum for basic education in South Africa. This issue would have to be rethought in the curriculum by means of the ethical approach of meta-methodology, as proposed by Odora Hoppers and Richards (2011, p. 39) as a way of transforming the methodologies currently dominant in universities and other knowledge-producing and knowledge-disseminating institutions by expanding them by means of joining IKS and modernity’s other generally into greater prominence in knowledge producing centres for a meaningful knowledge production scenario.

The focus of this study, namely, the integration of IKS into the curriculum, is an issue that relates to knowledge production and knowledge dissemination by curricula – a situation that relates to the anomaly that has been triggered in the knowledge production and knowledge dissemination in the curriculum for basic education in South Africa, in particular. The current paradigm for knowledge production has failed to provide solutions to humanity’s major problems in spite of the explosion of knowledge in the universities and the massive scientific and technological advances.

As mentioned earlier in the study, the course of the said stagnation that resulted in the huge anomalies in knowledge production may be said to be the result of the lack of a paradigm shift that has arisen because of the mono approach to knowledge production. This is a limited approach to defining knowledge as based on a Western script only, superimposing the status of science as the only way in which to define knowledge, it is for this reason that the call for the enlargement of the current 'paradigm shift' has become a necessary condition. The enlargement of the transformation in this case would be directed at the transformation of the curriculum for basic education through the integration of IKS into the curriculum in order to actualise the transformative power of education. In countries such as South Africa and Canada, where colonisation legitimised its grip on education by means of "cognitive imperialism" this would

- be in line with the concept of the decolonisation of education so that indigenous and non-indigenous could enter into education as equal partners.
- recognise the knowledge of the elders as well as the knowledge of those holding PhDs
- make it a standard condition for every programme to be scrutinised by the native circle of elders in Canada and, in South Africa, the SARChI- IKS Circle of the Advisory Council
- change policy by means of indigenising it taking into account views of the IPs themselves.

5.5.5 CONCLUSION

The theories for developing education to its transformative stage, as discussed in this chapter are intertwined. For example, the world problems, that have become part of the anomalies that failed to solve these problems, cannot be solved by relying on one loudly trumpeted worldview alone. However, transdisciplinary is a theory that may resolve this impasse because it conjoins different subjects or disciplines to address the endless list of world problems such as hunger, unemployment, climate change, crime.

The African perspective as a lens could lead to an understanding of other peoples' worldviews from their own point of view as equal partners. This theory also introduces cognitive justice as a holistic approach to knowledge production and innovation from the people from below, thus suggesting that the production of knowledge should be a collaborative process between IK holders and professors, educators, women and children and not excluding anybody.

In my view, second-level indigenisation is the crux of the transformation of the curriculum, whereby the rules of first-level indigenisation (FLI) could be challenged by questioning the very centres of power in a tactful way that may lead to the shift of the paradigm from the current state of knowledge to a new contract which acknowledges the right of other knowledge such as IK to be validated.

Transformation by enlargement is a theory that relates to the transcendence of the limitations of power dynamics in education by means of enlarging the space for the transformation of, in this case, the curriculum to convert it into an open curriculum that will turn the tide of the canons of universities that have claimed the sole monopoly of knowledge production with transformation that enlarges the ownership of the IPs' contribution to the production of knowledge as equal partners.

CHAPTER 6

RESEARCH METHODOLOGY

6. INTRODUCTION

Qualitative research enables a flexibility of methodologies. It is for this reason that this study adopted qualitative methodology which, as a result of its flexible nature, allowed the researcher to use qualitative data collection methods which tend to be open-ended and which have less structured protocols (i.e. the room to change the data collection strategy, as I did in this study, by adding, refining, or dropping techniques or informants – I did not conduct any fieldwork during the study. The said methodological background explains the choice of desk research as the research design for the study. Desk research may be defined as secondary research which is research that involves the gathering of existing data that has already been produced. The data required in this study was collected through the internet, newspapers, reports and library catalogues.

The focus of this study was on the integration of IKS into the curriculum for basic education. Accordingly, the study was located in a paradigm that would appeal to and be suited to the indigenous community in South Africa and elsewhere in terms of its sustainability. It was hoped that the sustainability of the study would appeal to the indigenous communities in terms of the “now” and “then” where knowledge development is concerned. However, the relation to the anticipated sustainability of knowledge for the IPs Rigley (1999, p. 119) cautioned that “Indigenous knowledge, interests, and experiences must be at the centre of research methodologies and construction of knowledge about indigenous people”. This assertion may be said to give direction to the purpose of sustaining knowledge for the IPs for future purposes with a particular aim in mind. Furthermore, Ridgley’s cautioning statement could also be suggestive of the fact that post-colonial research should be conscious of the position of IPs in research and that, for a change, the IPs must be the “makers” of such research and not just be continually researched as was the case during colonial times and which, in fact, continues to bathe case in some quarters.

This statement does not, however, mean that research by IPs for themselves should be construed as implying that this alternative approach is intended to compete with, or replace, the Western research paradigm. Instead, as asserted by Passenger (2004, pp.105,176), it should be about challenging Western research and contributing to the body of knowledge of IPs about themselves and for themselves, and for their own needs as people, rather than as objects of investigation.

The research methodology used in this study used a research approach, research design and research questions which were deemed appropriate to investigating the gap between South African basic education curriculum and transformation intent as connected to the overall orientation to the study and the type of findings to be arrived at from the study. As already mentioned the study used qualitative research method because of the flexible nature of this method which made room for non-conventional research methods such as indigenous methods to be used in the investigative process of knowledge production. In alluding to the flexibility of the qualitative approach Gibbs (2007) highlighted that it does not only reveal the range of subject matter about which people are talking but it also recognises and analyses the ways in which they frame and mould their communications. This approach was, thus, suited to a study on IPs frame their world and how the indigenous worldview may be validated in the curriculum for basic education.

These were significant reasons for choosing the qualitative research methodology for this study despite the fact that it is a Western research methodology approach. Qualitative research operates within a flexible set of procedures and steps that precedes the collection of data (Macmillan & Schumacher (2001, p12). In addition, qualitative research makes room for the decolonisation of research, as was the case in this study, which envisaged centring the indigenous knowledge concepts in the pursuit of a theoretical and conceptual understanding from an African worldview. Furthermore, qualitative research makes room for multiple realities that are socially constructed through individual and collective perceptions.

It is concerned with the understanding of social phenomena from the participants' perspective (McMillan & Schumacher 2006). Such multiple realities produce knowledge that was not previously universally representative like IK. Nevertheless, despite these omissions, scientific knowledge has been made to appear to everyone as a dominant discourse that shapes the world as we know it. The omissions of multiple realities have elevated modern science to a position where it is assumed to be the most and only visible form of knowledge in use while IKS, on the other hand, although used in various fields such as health and agriculture, are not acknowledged. IKS exists side by side with modern science only in a relationship of "mute juxtaposition" and "mutual ignorance, exclusive of all dialogue and exchange" (Hountondji 2002). This type of relationship points to power relations between the two knowledge systems as a result of the geo-political hierarchies of knowledge and intellectual property laws as well as a legacy of colonisation and apartheid in South Africa that oppressed the indigenous people and suppressed their worldview.

This study takes into consideration pluralism, multiculturalism, transdisciplinary and holism in its discussions on the integration of modern science and indigenous knowledge systems as concepts

that are consistent with the indigenous knowledge systems. It was hoped that this would help to reintroduce the missing aspects of being and knowing into knowledge construction. This, in fact, is the reason why, as an epistemology of hope, was deemed to be an appropriate concept for the purposes of this study in as far as bringing back the missing holistic human element in the production of knowledge is concerned.

Qualitative research is an overall concept, which encompasses several forms of inquiry that help us to understand and explain the meaning of socio-cultural phenomena without discarding their natural setting. This renders IK as a place-based knowledge (PBK) relative to qualitative research because of its nature of being connected to the IPs' place. Qualitative research is based on the view that there is a contrast between reality and individuals interacting with their socio-cultural worlds. According to Merriam (1998), a comparison between qualitative research and quantitative research reveals quantitative research as a form of research that singles out a phenomenon and examines the component parts, while qualitative research reveals how all the parts work together. It is for this reason that qualitative research was deemed suitable for this study, which viewed knowledge from a holistic perspective, which is in line with producing knowledge from an integrated approach.

Qualitative methodology focuses on the qualitative aspects of meaning and is employed in order to explore the meaning, or describe and promote an understanding, of human experiences. In addition, qualitative research also examines the life in "non-literate societies" Prior (2003). It may, thus, be said that the knowledge, ideas, attitudes and voices of the indigenous people may, therefore, be reflected in the explanations about themselves, their beliefs, cultures, traditions and their own idea of what knowledge constitutes. Brinketal., (2006) describes qualitative methodology as an appropriate and effective methodology for researchers who wish to explore the meaning, or describe and promote the understanding of, human experience that is not easy to quantify. The qualitative researcher in this study may also be seen as the "main instrument" in the research process as the researcher was the sole initiator of every process in the study, taking it into consideration that there were no informants or interviewees.

It was not possible, in this study, to quantify the experiences of indigenous communities although they could be narrated and described. It is for these reasons that the qualitative research design is deemed to be more relevant to the purposes of this study as compared to quantitative research design on the premise that the approach to investigating the integration of the IKS into the curriculum for basic education was, in fact, the beginning of a dialogue between the two systems of knowing, namely, IKS and modern knowledge (MK), also known as scientific knowledge which is the term, by default, as scientific knowledge is, in fact, not knowledge itself but part of all knowledges.

6.1 Research methods

6.1.1 In-depth desk research (IDR)

The title of this study is “The experiences of the integration of IKS in the curriculum for basic education: A case of South Africa and Canada”. The study was undertaken with the intention of exploring the possibility of transcending the mere inclusion (IKS tokenism) of IKS to a meaningful integration and acknowledgement of IKS in a respectful way that would engage and respect the indigenous communities’ knowledges in the transformation of the education system. I was prompted to choose this topic because of my listening and learning from the scholarship in Seminars and Conferences that I have attended and my contribution, albeit on a small scale, to the debates that took place fostered my interest in the inclusivity of education. For example:

- 2012 presentation of paper at the New Zealand ANZHES (Australia New Zealand History of Education Society) conference on my doctoral work in progress, namely, “Integration of IKS in the curriculum”
- contributions in the form of a chapter (25) in *African Theories in Inclusive Education* (2012) by Phasha and Moichela, in Nsamenang, B & Chombe, T
- in Moichela, KZ (2006) “Inclusive Nature of Indigenous Knowledge” at the SASE Conferences
- the researcher’s unpublished master’s research project on the “Possibility of the inclusion of Oral Tradition and Testimony in the History curriculum (2002);
- in Moichela’s review of Kallaway, P. (2002) “The Doors of Learning and Culture shall be opened” in *Paedagogica Historica*, Vol 39 (6).
- Moichela K.Z (2002) *People’s Science Voice: “Local Knowledge before Globalisation”* NRF
- in 1999 in a conference paper at the UK-HES conference “Old boundaries” and “New frontiers”.

As indicated in the introduction to this chapter, the nature of this study warranted the desk research approach, as I was not able to physically visit some of the countries highlighted as points of reference for the integration of IKS into the curriculum. I could only relate the narratives on the experiences of one of the country, namely, Canada, on the basis of its significant resilience in pushing the boundaries of knowledge production and which culminated in the realisation of the Treaty of Rights of IPs (2007) and the holding of the Canadian government to accountable for its

promises of reconciliation in the country's education system. This resilience in respect of the recognition of IK that has been marginalised in the form of institutional racism is still an issue of contention in institutions of education, even in recent years. For example, Lomawaima and McCarty (2006, cited in Anthony-Stevens; Stevens, & Nicholas, (2017), posit that their focus on indigenous issues in education allows them to *define* and *refine* their efforts, know their audiences, and push the boundaries of prevailing "safety zones" in the interests of naming and challenging the everyday marginalisation of IPs in education. These type of narratives illuminate the resilient nature demonstrated by Canadians, both indigenous and non-indigenous, in transforming the institutions of education into "sites of hope and possibility", as asserted in Brayboy and Maughan (2009, p. 2).

Desk research/secondary research [www.businessdictionary.com] refers to the gathering and analysing of information already available in print, published in secondary sources, or online. Desk research involves the summary and collation and/or synthesis of existing research rather than primary research where data is collected from, for example, research subjects/ experiments in science education. The desk research study, in this case, online desk research allowed the researcher to "visit" identified countries by means of exposing her to the literature that prepared the way for initiating the dialogue between the researcher, elders and peers on the research topic, namely, the integration of IKS into the curriculum for basic education in South Africa. I indicated earlier that the flexibility inherent in qualitative methodology allows for the reflection of the voices of the "other", for example, indigenous people. In other words, the dialogue alluded to between the researcher, elders and peers provided a practical example of an attempt to demonstrate a research study that incorporated indigenous communities and students in engaging in a discussion for shaping a framework that may be used as a guideline for revising IKS integration into the curriculum for basic education in South Africa.

The elders in this case were the SARChI-DE's circle of indigenous elders which represents the indigenous communities, both provincially and nationally while peers were SARChI-DE students who had completed their postgraduate degrees on issues pertaining to transformation in the education system in South Africa and also those who were still in the process of completing their studies in development education in relation to systems of education with IKS as the focus area. It should be noted that the elders, peers and fellows were not interviewed but were involved as critical analysts of the study as it progressed by the researcher. Their feedback was, thus, a back and forth process that assisted the researcher to shape the following aspects of the study:

- Identify suitable research questions
- Conduct ethical data collection

- Co-share about issues of concern in the subject of inquiry, namely, the framework for the integration of IKS into the curriculum for basic education in South Africa.
- Reciprocal sharing of ideas between the researcher, SARCHI-DE's elders, fellows and peers.
- Mutual ownership of the intended products and processes of the study.

The contributions were projected by the researcher by means of the SARCHI Community Engaged Research Continuum, which is depicted in the table below:

6.1.2 Table 2: SARCHI Community Engagement Research Continuum (SCERC)

Researcher-desk research	SARCHI community placed	SARCHI community driven research
SARCH-community research	SARCHI based participatory research	
Research located in/directed at community setting	Research with indigenous community representation by SARCHI circle of elders' participation	
Academic driven research	Academic drive by fellows	

Table 2: SARCHI Community Engagement Research Continuum (SCERC)

[Adapted from Claude-Alex, Jacob, MPH Chief officer, city of Cambridge <http://oprs.usc.edu/initiatives/cm> "Novel organizational approach: Development of the Harvard catalyst + CEnR Subcommittee Working to Address issues Across the Continuum"]in University of Southern California (2017)

It should be noted that the concept of fellows in the SARCHI-DE community relates to a community of continental and international distinguished professors in their respective interdisciplinary fields who advises the Chair in Development in Education and also critique students' research with a view to shaping the students' studies in respect of the locus of the Chair, namely, transforming

education in South Africa. The exercise that took place with the researcher's presentation of her desk research data became a reciprocal process that emphasised the following:

The IDR method, as identified, enhanced the collaboration between the researcher and intended recipients, namely, the indigenous community (represented by the SARChI-DE Circle of Elders). This type of intervention strategy by the SARChI-DE Circle of Elders and Peers in relation to IK issues was highlighted by one of the SARChI-DE fellows, Nabudere in his address to us as students at the SARChI's retreat in 2010 when he stated that, "these kinds of methods should be immersed in IKS so as to relate to the indigenous people and their knowledge and their local culture", Nabudere (2010). This would enable the indigenous people to define their own perspective instead of relying solely on Western research concepts of anthropology and history theorists and was also echoed in Mihesuah (1998, p. 1); (Kawagley 1995; Kanaqluk, 2001), in reference to the latter methods as "theoretical" and "ready-to-use" methods.

As the researcher, I attempted to move from the theoretical and ready to use methods alluded to by using desk research in conjunction with the elders' contribution to the study, thereby affixing an indigenous "tribal mark" to the method of research in this study. Indigenous tribal mark is a term coined by Crazy Bull (1979, p. 19) with reference to research that is reflective of the active involvement of indigenous people in the process of knowledge making. A practical example could be that of the Maori who have initiated the development of an indigenous way of putting the "tribal mark" on research with the creation of a specific Maori research methodology referred as Kappa Maori (Smith, 1999, pp. 183–195; Bishop & Glynn, (1999); Irwin, (1994).

Some of the recent studies in Canada also demonstrate this notion of the tribal mark with some teachers in the schools starting to show interest in the indigenous students of Canada's identity by adding the students' content to the prescribed curriculum, for example, the Mi'kmaq students (Pinkham, 2013, p. ii). According to Pinkham (2013) the teachers, both Mik'maw and non-Mik'maw, wanted to show the disjuncture between the students' lives outside of the classroom and the curriculum that was taught. This method, IDR, provided me with a platform to seek concepts of tribal mark in the anticipated curriculum for basic education in South Africa and which, in my opinion, could be made possible by means of the integration of IKS into the curriculum for basic education.

6.1.2 Meta-analysis (MA)

In recent years' meta-analysis has seen several different approaches as proposals for different terms, such as qualitative meta-analysis, qualitative meta-synthesis, meta-ethnography,

grounded formal theory, meta-study, and meta-summary. Of these approaches, qualitative meta-synthesis (QMA) has been the most popular and frequently used, as highlighted by Finfgeld (2003), Jensen and Allen, (1996) and Thorne, S. et al., (2002), and based on the argument that the meta-analytical procedure, as compared to qualitative meta-analysis, is more interpretative than aggregative. In reality, it may be said that the proponents of MA are, failing to realise that quantitative meta-analysis also aspires to bring about conclusion and inferences just as MA aspires to develop a single conclusion from several selected studies to arrive at a powerful greater narrative. This was definitely so in the case of South Africa and Canada, and It is for these reasons that MA was used in this study to explore relevant studies conducted on the transformation of the curriculum in order to provide a comprehensive understanding of the effects of the integration of IKS into the curriculum.

The selected studies and literature were found to be relevant to the envisaged project. MA shares characteristics with qualitative meta-analysis (QMA) in terms of its goal “to contribute to the construction, explication, and development of theory in order to provide a more comprehensive understanding of a particular field of study” (Wang & William, 2014, p. 325). According to Hunter, Schmidt, and Jackson (1982, p. 10), this would not be possible by means of a single study that may not be capable of resolving a major issue.

I adopted a systematic literature search strategy which included electronic searches using terms such as IKS in the curriculum or IK education in order to arrive at a meta- study than could play a significant narrative role in the framework, thus shedding some light on international, meaningful practice in respect of the integration of IKS into the curriculum. This preference for the concept of “meta-analysis” over meta-synthesis is shared by some notable scholars such as Stern and Harries (1985), in Timuluk (2009, p. 592), with this term, meta-analysis, being used in the first presentation of MA. It is for the said reason that MA was deemed to be appropriate term to be used in this study.

Meta-analysis in this case was discussed within the confines of QMA because meta-analysis, as a method, also follows the same logic and objective as QMA, namely, to assess a field of study beyond one particular study. As a result, QMA for the purposes of this study was defined from the aspect of conducting a rigorous, secondary, qualitative analysis of primary qualitative findings. This suggests that meta-analysis should be viewed from a position of providing a concise and comprehensive picture of the findings across qualitative studies that investigate the same general research topic, as in the case of this study where the researcher analysed the findings of the selected studies that had investigated the same general research topic, namely, the integration of IKS into the curriculum, in Canada, South Africa and elsewhere.

This method, although new in the research agenda, has been authenticated by recent scholars for its transformative part in the checklist role it plays in the research findings of completed studies and applauded for its influence in recent research by Schreiber Crooks, and Stern (1997, p. 314) and Finfgeld (2003, p. 894), in Timulak (2009, p. 591). According to these theorists, MA may be conceptualised as a new trend in research that is integrative in interpreting the findings of qualitative studies that are more substantive than those resulting from a single or individual investigation and as asserted by Hunter, Schmidt, and Jackson (Ibid).

Meta-analysis in this study was used to frame research questions in relation to South Africa and Canada with regard to the integration of IKS into the curriculum generally and in South Africa, in particular (See chapter five).

6.1.3 Case study (CS)

6.1.3.1. Philosophical underpinnings

In chapter one the salient terms used in for this study were unpacked with the focus on indigenous knowledge as an untapped knowledge that has thrived and sustained indigenous communities, both in the past and today, its possibilities for sustainability in the future. The holistic nature of IK qualifies it as a “knowledge system” in which its outstanding character of pluralism in perceiving the world in a way that is meaningful to the social landscape is highlighted. It is this pluralism nature of IKS that convinced me, as the researcher, to posit it as an alternative way of seeing the world and adapting my research framework accordingly.

6.2. What this study adds?

The purpose of this study was to explore the “how”, “what” and “why” of the integration of IKS into the curriculum for basic education. Both Canada and South Africa were used in this exploration through the analysis of arguments on the integration of IKS into the curriculum.

Many postgraduate students have been exposed to predominantly Western research methods. This has a number of implications when undertaking research with or relating to IPs everywhere in the world. In my case, when I discussed this study with the SARChI-DE community, they wanted to know what the best way would be to gather information to actualise the “indigenous theories”. I proposed a way that would be relevant to the local Indigenous learners’ education and explained that I would be using the arguments for the integration of IKS into the curriculum in Canada, South Africa and elsewhere by means of analysing documents that I would retrieve through desk research, case studies, and meta-analyses as explained earlier. The methodological approach of the case study has been taken within the rigour of the qualitative research based in terms of its flexible approach to methods other than Western research ones.

This approach assisted me in my explanation to the SARChI-DE community about finding a common ground where indigenous and Western methodologies could complement each other and, in this case, qualifies as also being worth scientific application in terms of its being culturally relevant and also, acknowledging the importance of its integration with Western knowledge systems. This bi-cultural process would enable the two KS, IK and WK, to co-contribute in shaping life's daily decisions –in other words, a “meta-knowledge” which is suggested by Nakata (2002, p. 6-7) as a basis for the IK and WK's interactions with multitudes of intersecting, often conflicting or competing discourses emerging from the different systems of knowledges.

In addition, this chapter analysed research studies that had already been conducted on the theme of this study, namely, the inclusion of IKS into the education system in South Africa. It was found that the majority of studies which have been conducted were empirical in nature and were based on interviews conducted with informants.

Their findings were based primarily on the teachers' attitudes to IKS and its integration into the curriculum, thus suggesting that the findings were serendipitous because the majority of teachers are still not yet convinced about the validity of IKS, let alone its integration into the curriculum for the reasons that have been highlighted above in relation to the Western training of educators and its implication for the way in which teachers conceptualise IKS. These types of stereotypes and other profound reasons have contributed to the lack of transformation intent in the curriculum for basic education in South Africa. It was, therefore, hoped that study, re which used the case study method by means of desk research, may add value to the debates on the inclusion of IKS into the education system without relying on the one-sided voice of teachers which is, anyway, speculative in most instances.

This study does not claim to be the final word on the reasons why the curriculum for basic education in South Africa is still lagging behind in transformation. However, its aim was to highlight the issue of transformation intent in the curriculum by means of exploring cases from elsewhere in the world and using a generic approach to the experiences of countries of interest in respect of the governments of these countries being held accountable in relation to the recognition of the rights of IPs in the curricula, for example, in Australia, Canada, Aotearoa New Zealand, Latin America (Bolivia) and the United States. In relation to this study, the issues of these rights of IPs illuminate the knowledge of the indigenous people with regards to lands highlighted in (Dodson 2009) in reflection of other salient features of the Declaration on the Rights of IPs, in the following articles: 10 + 26: 1,2,3; 27; education (Articles 13: 1,2,3; 14:1,2,3; 17:2 and science (Article 31). It was, however, only Canada's experiences in terms of the residential schools that were placed in juxtaposition to South Africa's experiences as a result of its quasi resemblances to the apartheid policies in education – See discussion on the limitations of the study. This study has to a limited

extend, attempted to put into practice the issue of transforming research as well, by making it accessible to the public – this has been done by having at least the abstract of this study summarised in two South African Indigenous Languages, namely; Setswana and Sepedi which can be accessed in the Unisa library.

6.3 CONCLUSION

The research methodology used utilised the lens of post-colonial research which shifts the position of indigenous people in research as objects of research to a new position as subjects in research. In this study, although the indigenous people were not physically involved in the contribution to the study, the unique flexible nature of qualitative methodology enabled the researcher to tap into methods that would “take” her to research sites that she would not otherwise have been able to visit due to the constraints mentioned in the section on the limitations of the study. The methods used included in depth desk research by means of which the researcher attempted to show how it was possible for the people at whom the research was directed could have a “voice” from the planning stage of the study until the end of the study. This was demonstrated in table 2 in this chapter.

The study also used case study document analysis in order to analyse documents on relevant cases, for example, theses and secondary sources, including official documents that were the only source of historical background to understanding why events had unfolded as they had. The other method used was meta-analysis which formed the basis of the study because of its nature of analysing already analysed data so as to produce the new theoretical framework that was generated for the purposes of this study that may lead on from this research to further investigations based on a full scale comparative study on the research topic that should value the subject of “opening of the curriculum” in respect of elements from the IKS/separate ways of understanding the world and, thus, paving the way for the reconciliation of the separate ways of understanding the education agenda in Canada, on the African continent and in South Africa, in particular.

CHAPTER 7

Conclusion and Way Forward

7. INTRODUCTION

The introductory phrase in a study by Albert Einstein refers to the problems that have been created by the scientific knowledge explosion and inherited by the developing countries from the West and which have failed to solve humanity's intractable problems which can be referred to in a complete list of the 170 problems facing the world as listed in Judge (1994-1995).

The opening phrase, shows that Einstein as one of the renowned "scientist" according to western standards, acknowledges the failure of the scientific knowledge boom that has left the world as an undesirable place in which to leave. It is for this reason that he appealed for a new thinking, which, in view of this study, has been captured within the concept of "Rethinking Thinking" – a concept that calls for a new way of reviewing the curriculum for basic education. The old paradigm has left the world on the brink of catastrophe because the old paradigms which were coined by science and which, in spite of the scientific revolution and technological advance, have not succeeded in solving the world's problems which have led to the education system that has adopted "vicious problem loops" that encircle the scenario of problem solving in the whole world to a point where the situation regarding world problems is being aggravated.

Having realised that developments in scientific and technological advancement are not, necessarily, creating solutions to recurring human world problems, it is time to pause and think of a new paradigm. The new paradigm should be a paradigm that is capable of transforming the production and development of knowledge, thus leading to more practical solutions to the problems facing humanity that science and technological advance have failed to solve. This new paradigm is humanity's only paradigm of hope, which Africa can offer to the world in the form of an epistemology that has not been tapped into and which is, both human centred and sustainable in nature in view of the fact that it survived all forms of marginalisation in the past.

However, this gift of Africa to the world will be of no value to institutions that are not yet open to the transformation of their existing paradigm and, thus, there has to be an opening up of their paradigm to include IKS. This may be realised through the notion of transformation by enlargement, which has been elucidated in this study and which is one of SARChI-DE's emerging transformation concepts.

The resilience demonstrated by Canada's IPs in relation to education has been directed at rooting out assimilation policies in the envisaged education system because it has been realised that these policies have had a negative impact on the learning of indigenous learners and have resulted in the following:

- limited indigenous parental involvement in the education of their children
- poor performance on the part of indigenous learners
- cultural deprivation and compensatory education throughout education system
- poor prospects in education after school

It is imperative that these negative outcomes of an education system that continues to uphold colonial assimilation policies are not avoided because avoiding them and not challenging them will prolong the colonial education system with its negative impact on the education of the indigenous learners throughout the world. This study is arguing for the same type of resilience shown in Canada in the process of transforming the curriculum for basic education in South Africa and it is hoped that this will open up the current curriculum as exemplified in the suggested model of a curriculum for the foundation phase as a starting point for transforming the total curriculum in such a way that it includes the new paradigm.

7.1. Final words

In this study reference to best international practice in relation to the integration of IKS into the curriculum was made to Canada with the Alaskan culturally responsive curriculum as a case in question. The envisaged IKS integrated curriculum in the international context, as exemplified in Canada's Alaskan curriculum example, would be characterised by the following central themes:

- holistic approach to local and regional approach sustainability.
- transformational learning which advocates the need to change towards sustainable behaviour in relation to the existing relationship with the environment.
- encouragement of action towards a sustainable future.
- cultural inclusiveness aiming at the promotion of the incorporation of indigenous ways of knowing and doing into education for sustainability (EFS).

These issues raised above prompt the integration of IKS into the curriculum for basic education as an integral component of all learning and not merely as an add on. The approach adopted by

Canada with the Alaskan culturally responsive curriculum clearly demonstrates the possibility of a curriculum that is local' that is, locally relevant in terms of the geographical resources at hand but also global in focus in preparing the IL for their competitive role in the global arena. This chapter presents suggestions for the Department of Basic Education, as well as for further study. In addition, the chapter will discuss both the significance and the unique contribution of the study.

7.2 Limitations of the study

I acknowledge the limitations of the study with regard to a subject as deep and sacred as IKS where there are issues about the acknowledgement and legitimacy of IKS and also about ownership and protocols which must be observed, obtained and transmitted. In addition, it may be that the researcher was not sufficiently mindful of the fact that this subject of inquiry is not conclusive but only the tip of the iceberg, as was exemplified in the Alaskan model of a culturally responsive curriculum with its wide and deeper wealth of knowledge to be uncovered. Weenie (2009 p. 69), cited in Cardinal and Hildebrandt, (2000, p. 31)) had this to say:

To truly understand Indigenous epistemology and ontology requires “years of detailed, rigorous, disciplined training of the mind and body” (Weenie 2009, p. 69). It may, therefore, be suggested that the study may have conveyed only part of the argument for the integration of IKS into the curriculum for basic education which may further be regarded as a partial attempt to make a contribution to ongoing developments in the expression of indigenous pedagogy and curriculum development.

My “standpoint” on issues of indigenous knowledge in this case may have been compromised as a result of my having to use Western research methods to gather data. These methods are paraded as universal. This may, in fact, demonstrate a conflicting dichotomy which was demystified by Smith (1999, p. 2) when she asserted that it is in situations such as these highlighted above that, as a researcher, you feel as if you fall into the category of classification whereby you are invited to problematize research and you are conducting that research “as a significant site of the struggle between the interest and knowing of the West and knowing of the ‘other’ as alluded to in (Chiliasm, 2011; and Shahjahan, 2005) . This, in turn, suggests that we sometimes find ourselves as researchers into IK issues being irrelevant to the text we published as indigenous researchers. I am hoping that my argument for the integration of IKS into the curriculum for basic education in South Africa does not fall within this trajectory.

However, in view of the fact that the educational centres where we study for degrees have not yet transformed to the extent that examiners who have been trained in Western ways of knowing no longer question IK as valid knowledge and also we are faced with the global special challenges of not using indigenous methodologies that are frowned upon as subaltern (Spivak, 1990) and

whose ability to speak are still regarded as questionable, we find ourselves having to conduct our indigenous research in the languages of conquest that speak past the intended indigenous communities for examination purposes. This may also explain the reason why I felt it necessary to use figure 1 in the study to illustrate the aim of this study to engage indigenous communities, in this case the elders of SARChI-DE who represent the IPs of South Africa in view of their demographic selection from the various provinces in South Africa.

The decision was made to use the in-depth desk research method which, in addition to its economical nature in respect of accommodating researchers who may be facing challenges in relation to the time and resources available, as it was the one method that could open the door for indigenous people and peers to contribute to the shaping of this study on issues of cultural responsiveness and, thus, enabling a pragmatic approach regarding the active co-operation of the elders and Indigenous researchers in the dialogue that was aiming to shape the new frontiers of knowledge production and dissemination in basic education in South Africa.

The IDR method also helped me to overcome the limitations imposed as a result of the fact I was not able to take long periods of leave from work to undertake research into IKS as it would have been experienced first-hand in various far-flung international countries that have made significant progress in their attempt to indigenise their education systems. Financial and time constraints were also a limiting factor preventing the researcher from travelling to countries such as Australia, Aotearoa New Zealand, Canada, Bolivia, and the United States of America to obtain first-hand experience of the unique nature of each country's integration of IKS into their curriculum. Accordingly, as already mentioned in the study, it was possible only to explore in person the experiences in Canada and just to make reference to Australia, Aotearoa New Zealand, Bolivia and the United States, where necessary, thus limiting the scope of this study. The use of the IDR method resulted in my becoming acquainted with the terms of reference that relates to indigenous communities as they are used in the literature of different countries, for example, in some cases I used the term traditional knowledge when to the indigenous knowledge pertaining to a particular country, for example, Canada, aborigines in the case of the indigenous communities of Australia, Maori for the indigenous people of Aotearoa New Zealand, and blacks in the case of South Africa. However, IPs is a generic term used to refer to the people indigenous to their lands of birth before these lands were colonised. According to Peters and Mika (2017, p. 3):

“Indigenous” has gained prominence as a term to describe Aboriginal peoples in an international context through the increasing visibility of international Indigenous rights movements. “Indigenous” may be considered by some to be the most inclusive term of all, since it identifies peoples in similar circumstances without respect to national boundaries or local conventions, but it is, for some, a contentious term since it defines groups primarily in relation to their colonisers.

Frequent use was made throughout the study to Odora Hoppers as a source of reference which may be seen as heavy reliance on her. It must, therefore, be noted that, apart from Odora Hoppers' role as my supervisor, she is also one of the policy experts entrusted by the United Nations with the international task of guiding the South African government in the design of the IKS policy and its application in the transformation of the education system. In addition, her role as the head of SARChI-DE in South Africa may have influenced my focus on contemporary dialogues on the transformation of the academy, based on on-site annual retreats and forums that conduct dialogues on issues relating to systems transformation. It is after the immersion sessions at SARChI-DE that I became gravitated to carve my research niche around systems transformation in the curriculum for basic education in South Africa as an area that I can relate to in a meaningful way, taking my previous experience as a teacher at foundation level and other levels, as reflected in my personal background of this study in chapter 1.

7.3 Suggestions

The suggestions made in this study are directed to policy reviewers nationally, policy mediators (indigenous knowledge holders) at the provincial and district levels of the Department of Basic Education (DBE), policy practitioners and the teachers in schools who are involved in the curricula for basic education. These suggestions take into account SARChI-DE's transformation by enlargement theory which guided this study as a praxis for the recognition of the importance of the open space in the curriculum so as to ensure a curriculum for basic education that is open in the public space that has ontological consciousness with regard to including the voices of the indigenous people in the creation, production and dissemination of knowledge.

Teachers, as frontline professionals, have an important role to play in influencing the process of a culturally responsive curriculum through "knowing their learners, and working with indigenous knowledge holders in developing and producing a curriculum that is socially responsive to the needs of society where the indigenous learners will also see themselves as co-creators in naming the world in terms they can understand". This social responsiveness of the curriculum in reaction to Africa has been epitomised by Dei (2014:165-180) in highlighting a broad view of education in terms of engaging local, community, and off-school knowledges (which are rooted in the African Indigeneity) in both formal and informal sites as part of the processes of a rereading the 'school curriculum.' By means of indigenising the curriculum.

7.3.1 Suggestions for policy makers

The following suggestions are made for policy reviewers in the National Department of Basic Education

- Policy reviewers should embark on consultative national corporations with indigenous knowledge holders to listen to their views as representatives of the indigenous communities in South Africa on how to replace the current structures for reviewing the curriculum of basic education in relation to the functional integration of IKS into the curriculum.
- Policy reviewers should promote the pursuit of collaborative consciousness as suggested by Batiste (2013) in revising the curriculum for IKS integration to ensure the promotion of social betterment, justice, ecological sustainability and also land-based education (LBE) that would present indigenous worldviews as paramount in social justice issues.
- They should be tenacious in considering alternative ways of teaching and learning that may take education outside of the classroom and base the focus on local places, incorporating the theme in the culture of South African IPs.
- They should move to more open spaces of inquiry in developing new systems of knowing and positioning learners' voices as the focal point for the said considerations.
- They should consider referring to the Canadian example in respect of the Indigenous Renaissance for renewing and reconstructing the principles underlying their own worldviews, environments, languages, and forms of communication with an aim of re-examining how all these elements combine to construct their humanity.
- They should be receptive to Afrikology as an epistemology that may shift the paradigm of knowledge creation by repositioning the "global loss" of humanity in our lives through an education that takes into account the whole being of the child (physical, spiritual, mental and emotional being).
- They should transform the education system in South Africa to a level where the integration of IKS into the curriculum for basic education becomes the main text and not just a footnote.
- They should view the centring of Afrikology in the curriculum for basic education as a challenge to the "Barbarisation" in the school curriculum with its ongoing muteness with regard to the development of indigenous languages in South Africa.
- They should demystify the concept of a blurred education system which universalises English, while denying the indigenous learners the opportunity to see themselves in the curriculum for basic education.

- It is recommended that the DBE should utilise the praxis of transformation by enlargement to flag the issue of language and culture in the curriculum for basic education without creating “Bantustans” in the curriculum. However, English and Afrikaans should not be discarded in the process of the integration of IKS into the curriculum for basic education and, instead, they should be taught as elective foreign languages.
- It is also recommended that the DBE should introduce compulsory pre-service programmes that will inform all teacher trainees about the development of practice and ways of communicating with their learners in a culturally responsive way.
- The DBE should make it mandatory for universities to link their practice teaching modules to the inclusion and consideration of indigenous perspectives and place-based learning(PBL) that nurture both a locally aware in the state of mind and global perspectives.
- The prioritisation of the scientific inventions of indigenous knowledge holders as experts that may improve the lives of IPs in respect of pressing issues such as the food security strategies that will sustain the communities in the light of the problem of climate change that is facing the world.
- The elders are given a role in the planning of the curriculum as valid bearers of remarkable renaissances such as the African Family Renaissance (which is the nexus of IKS) for the sake of posterity.
- The involvement of the elders in the education planning in respect of curriculum development, thus acknowledging them as both leaders with deep educational foundations and also the repositories of indigenous knowledge and managers of IKS.

While my suggestions to the DB may focus on practical recommendations for the comprehensive transformation of basic education in South Africa, I humbly remind the policy – makers that these recommendations are not an end in themselves.

7.3.2 Suggestions for policy mediators (elders)

The following suggestions are directed at the provincial and district levels of the Department of Basic Education:

- Lobbying government, questioning science, and advocating the channelling of resources in the direction of a more independent process of decision making, for example,

establishing cultural community centres and mobilising and organising the IPs for the transformation of their education system

- Engaging the DBE with 21st century questions such as the following: *What is the aim of education in the 21st century? Is such education in pursuit of the truth? Is it aiming to address either humanity's needs or market driven policies? Should education be focused on social, academic and cultural development to prepare the youth for lifelong learning?*
- Directing the process of centring the African philosophy of Ubuntu in terms of influencing basic education and the way in which basic education is understood.
- Conscientise the basic education policy makers to be aware of assimilation policies masquerading in the guise of the language of development.
- Globalise the IKS context in South Africa by collaborating with other indigenous communities elsewhere, for example, Canada, in sharing and learning about best practices in respect of the integration of IKS into the curriculum for basic education.
- Mentoring educators and teachers on undocumented/oral theories and texts on African learning theories on the generative development of the child's learning.
- Shift the paradigm of using the curriculum as a tool for hegemony to a tool for promoting lifelong learning.
- Join hands with acknowledged Western indigenous scholars to recreate the, in Fabian (1978, p. 317)'s term of "high culture" (pure or popular culture) of Africa by means of the validation of IKS as authentic knowledge systems.
- Own up (profess) to the collective ownership of the indigenisation of the education system in South Africa.
- Be selective in the lessons that maybe learned from the cultural competencies of other countries. In other words, choose cultural competencies that relate to the context of basic education in South Africa.
- Guide the educators on IKS issues that may help with the curriculum content in respect of the spiritual issues of knowledge and their interconnectedness with the cosmos.
- Elevate the issue of land in basic education by moving it from the periphery to the centre through deep, meaningful conversations on the significance of land from an indigenous perspective.

- Emphasise the indigenisation of the curriculum as a serious issue involving incorporating a ‘discernible voice’ in the transformed education system in South Africa.
- Be leaders in the conversations on other renaissances such as the African Family Renaissance that requires rethinking in the light of the moral degeneration happening in South Africa.

7.3.3 Suggestions for practitioners (teachers)

- Change their mind set in such a way that they come to value IKS as valid knowledge which, like any other knowledge, should be disseminated with dignity.
- Be the minstrels and trumpeters of African civilisation in the suggested model of an Afriko-continuum transformed basic education curriculum.
- Know their indigenous learners and learn their knowledge systems to ensure that their teaching relate to the needs and aspirations of the indigenous learners as well.
- Demystify the concept of ‘museumising’ IKS as artefacts of curiosity so that they become valid systems of knowledge for every learner.
- Change their mind set towards teaching IK using their Western epistemology trained methods to learning from the elders and other best practices from elsewhere in respect of teaching IK in a culturally responsive way.

7.3.4 Suggestions for pre-service and in-service teacher training

- Propose programmes to the universities that involve their reviewing their teaching practice (TP) modules and ensure that they include mandatory IKS content from year 1 and even exit courses as majors in IKS methodology
- Suggest standard compulsory training programmes for teachers in service on IKS learning and teaching as part of professional development (PD)
- Involve the elders in the development of the learning and teaching support materials (LTSMs) to include content that is South African indigenous knowledge context-relevant.

7.3.5 Suggestions for further study

The following topics for future research are suggested:

- Produce an ideal national framework for the review of the suggested model of the Afro-continuum IKS curriculum for basic education in South Africa.
- The recognition of the intelligentsia in the local communities.
- Research on the knowledge engagement of local communities with publications based on such research being made accessible to the public.
- “Uneducated” to educate the “educated”: Whose knowledge is valid?
- The academy to reflect on talking to itself: Disrupt concepts of epistemologies, paradigms and axiologies and relate to local communities in languages that are relevant to them.
- Halting the grinding machine: Content justice for intellectuals who are the consumers of colonial content without questioning it.

7.4 SIGNIFICANCE OF THIS RESEARCH

This research is deemed to be significant as it suggests the model of a curriculum for basic education that is rooted in Afrikology as the basis of all knowledges and including IKS. The model focuses on the foundation phase of basic education in South Africa with the hope that, as further reviews are conducted on the envisaged curriculum (as suggested above), the theme of Afrikology as the nucleus will expand to include the inter-mediate and senior phases. A concern was voiced about the practical recognition and genuine respect for the voices of the IPs (elders), the so-called 'lowly educated' in advancing the course of an indigenised curriculum not only in South Africa but also the world over where the legacy of colonialism has left its footprint. The study highlighted reports of policy implementation in Canada and as well as selected case studies on the integration of IKS into the curriculum for basic education with the purpose of juxtapositioning these cases with the South African case which has dysfunctionality. The findings from these cases provided suggested guidelines for the revision of the way in which IKS is perceived in the transformation of the curriculum.

The guidelines are intended to benefit policy planners and practitioners involved in revising IKS integration into the curriculum for basic education at the foundation level of basic education in South Africa in a pragmatic way. It is anticipated that this study will make a contribution to DBE in gaining insights into the gaps which have resulted in the dysfunctional integration of IKS into the curriculum for basic education in South Africa. The suggestions that are based on the findings of the study may function as points of reference for the future planning and revision of basic education policies on issues relating to IKS integration into the curriculum for basic education. In taking heed of Alstein's introductory words to this study, a new paradigm by means of new

articulations of a new way of revising the curriculum for basic education in South Africa can be exemplified as follows:

7.4.1 SARChI- DE New Emerging Transformation Concepts

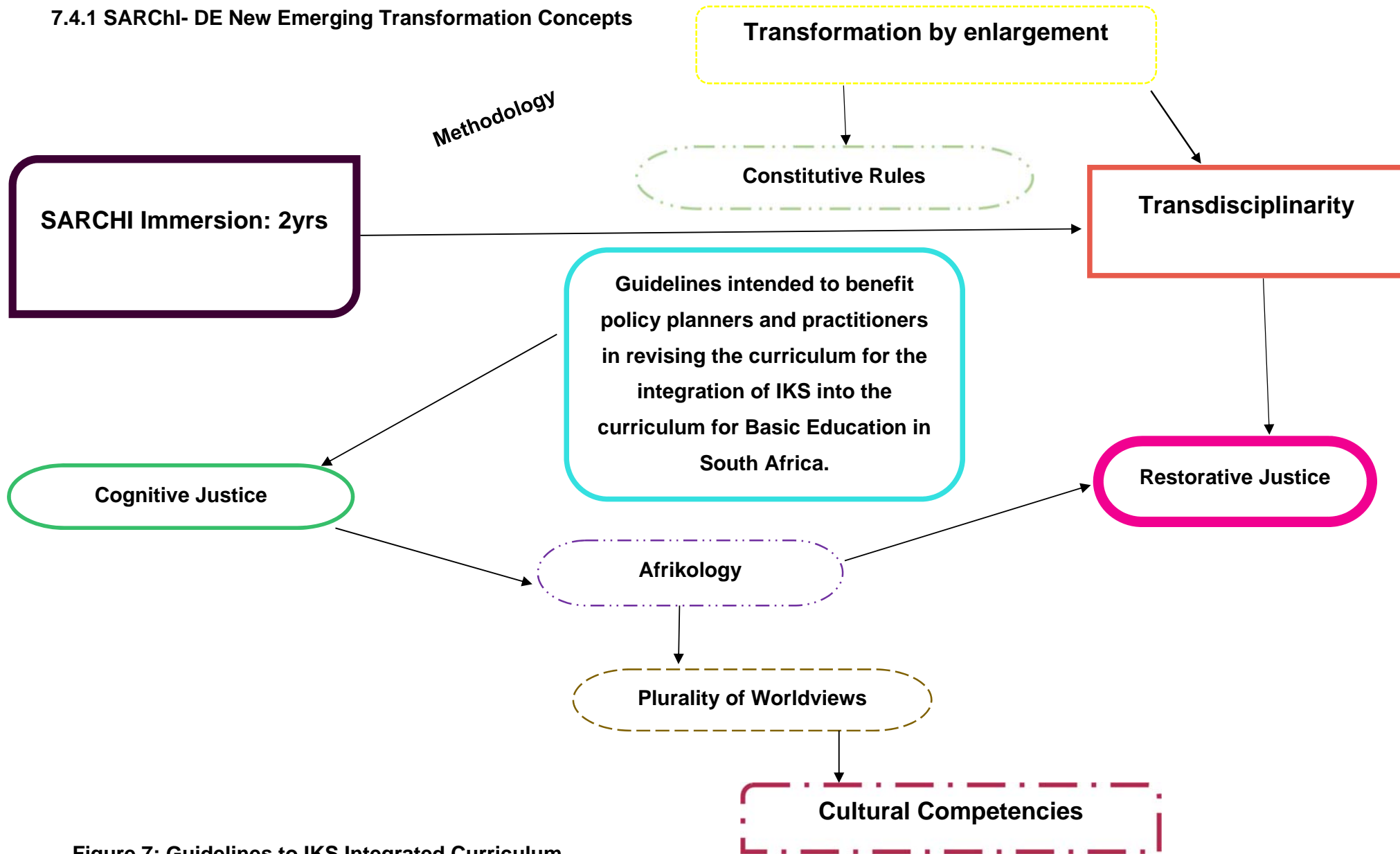


Figure 7: Guidelines to IKS Integrated Curriculum

The diagram above is anticipated to be a Learner-Centred Curriculum framework for curriculum designers, developers and delivers in the enterprise of reviewing the curriculum for a functional integration of IKS into the curriculum for basic education in South Africa. The view projected in the diagram above takes cues from Kuhn's_(1970)'s work in (new 'role of placing new relations amongst the Data. Earlier on I raised the issue that the normal puzzle of scientific problem solving failed to resolve anomalies in the world, resulting into looming crisis, and eventually, the nature of scientific activity started to change gradually, (p.91). The engagement of the suggested SARChI-DE new emerging concepts by the DBE in their curriculum reviews may result in a new view of the transformation of the curriculum, its methods, and its goals. This kind of perception regarding a new way of reviewing the curriculum has been viewed by one perceptive historian, who upon viewing a classic case of a science's reorientation by paradigm change, recently described it as "picking up the other end of the stick," a process that involves "handling the same bundle of data as before, but placing them in a new system of relations with one another by giving them a different framework." [Herbert Butterfield, *The Origins of Modern Science, 1300-1800* (1949, pp.1-7].

In the case of this study, a different framework will be Afrikology as the focus of this anticipated change in curriculum reviews. In chapter 1, the researcher highlighted the fact that SARChI-DE's methodology of immersion capacitated her as one of the students in this Chair – the immersion period for all post graduate students under SARChI-DE lasts for two years- during these two years new emerging concepts in development education as outlined in the concept map in figure 7 are unpacked and engaged in issues of paradigm shift, especially in systems of knowledge where the current paradigm has failed. Much has been said about the paradigm of science that has failed to solve the world problems to date and the need for a paradigm shift that will make knowledge production meaningful in the 21st century as opposed to masses of information that is meaningless in addressing world recurring problems. This background is important to justify the students as researchers, proposal of the introduction of these new emerging concepts in policy frameworks. Suggestive to say, the proposal for the introduction of these new emerging concepts is made from a grounded background of Second Level Indigenisation whereby the constitutive rules of knowledge production are questioned through confrontation without any fear in engaging complementary plots in knowledge building. It is for these reasons that SARChI-DE decided to base the new discourses on alternative research into education for Africa and South Africa, in particular, on transformative paradigms that relate to requirement of the local conditions in the countries in question.

Thus, SARChI-DE conceived of concepts that would challenge the consequences of colonialism for IKS; that is, the cognitive imperialism of all non-Western people. The concept of the construction of knowledge from a wholeness perspective enhances the rationale for this study, namely, the integration of IKS into the curriculum for basic education in South Africa. Transdisciplinarity, as described in Section 3 of the Transdisciplinarity Charter, which complements disciplinary approaches, occasions the emergence of new data and new interactions out of the encounter between disciplines and offers us a new vision of nature and reality. Worldview plurality or worldview diversity is an argument that has been exemplified by Kosits, R.R. (nd, p.69), that as part of the sciences is not monolingual but plurilingual. Suggesting that this science should recognise and nurture the plurality of views of the “other”. By so doing, this science would be improving science and exploring space for possible connection between those worldviews and psychological thought and practice. This argument shows the mediation role that can be played by means of transdisciplinarity between compartmentalised knowledges.

Culturally competencies: refers to how one deals with others of different cultures. In regards to education, a culturally competent teacher exhibits awareness of self and others. When creating a curriculum, they ensure that topics are relevant to students and that activities engage students in multicultural activities. Why the need for cultural competency inclusion when creating new curricula? it prepares students for the real world. Life does not exist inside a bubble. Students need to be taught how to deal with diversity. By presenting them with opportunities in school, students will have knowledge on acceptance of other cultures when they leave school. Historically, curricula often focus on one perspective. This sends a subtle message that these people, authors, events, or sides are what is valued, and not others. Focusing on cultural differences in the curriculum, learners are also forced to look internally at their own morals, values, and beliefs. This can open the door to self-appreciation of one's own culture. A third benefit is a culturally competent classroom sends a message of appreciation, acceptance, and respect of all cultures. By teaching about and embracing diversity, this shows students that all views and beliefs are welcome. What issues should she address when creating a culturally competent curriculum?

- Awareness

The first step of achieving cultural competence is cultural self-awareness. The educator must ask herself certain questions. With what culture do I identify? What are my beliefs? What are my values? by accepting that there are cultural norms that differ from the educator's, the educator can research and familiarize herself with other different beliefs, values, and norms of his/her learners.

- Relevance

Relevance refers to the students' reactions to a given topic, assignment or activity.

When creating a curriculum, the assignments and activities that are chosen by the teacher can reflect cultural competency – exclude activities that does not relate to the learner's worldview.

An example of the critical issue of relevance in the Curriculum for basic education in South Africa, can be deduced from the Umalusi Report (2013) on the Academic literacy problems in South African education. The example is based on the Annual Test Assessment (ANA) for 2011 that in spite of the improvement that has been made with 2007 results, the extract from the 2011 ANA results reflect the opposite to improvement:

12. Write five sentences about how you spend your playtime at school. Use the correct punctuation marks and spelling.

rain
 siyadala
 siyathenga
 bese siyadla
 besesingena ema kiasini

(Department of Basic Education (2011) Report on the Annual National Assessments of 2011)

This extract was published in the ANA report of 2011. It is an answer of a Grade 3 learner who was responding to an English version of the test. The learner is clearly not a native speaker of English as he or she also uses isiZulu in his answer to the question. But, it is also clear that the learner understood the question though sometimes teachers are allowed to assist the learner in this regard.

Transformation by Enlargement: We must see our goal as moving beyond disciplines, beyond subjects, to connecting with life and life processes through deep reflection on content, methods, theoretical frameworks and paradigms. We must move to the life worlds, and we must make what we do into 'life statements' in shifting from acceding to the anomaly of today's enormous accumulation of knowledge that still fails to provide solutions to humanity's major problems. In the light of this, new methodologies that will relate to the problems encountered by humanity today need not only to be thought about in quantity but in quality, that is this case would be about a curriculum of quality that is culturally responsive to the needs of the learners in their respective localities.

Afrikology: Afrikology positions education at the centre of sustainability in terms of knowledge production that was both communal and relevant to societal needs. This knowledge was preserved in the form of oral tradition, handed down from generation to generation. Mokhatar (1990), in *Politics of knowledge production in Africa*, among others, posits that Afrikology bears testimony to the fact that before colonialism, Africa was a hub of technology and industrial knowledge in states such as Nok in Nigeria, Meroe the so-called “Birmingham of Africa”, Egypt and the ancient kingdoms of Ghana (Nyachonga, 2014, p. 57). In addition, according to Ogutu and Kinyanjui (1997), Afrikology highlights the historical records of the capacity of African knowledge systems to utilise science in the transformation of the jungle swamps of the Nile River delta into a site for food production.

Cognitive Justice: Cognitive justice brings with it the recognition of other knowledge systems, in this case IKS, as valid knowledges for teaching and learning. In this study, with the freedom to name the development in their own terms. In addition, the restoration to life of other forms of knowledge would have to be conducted in a just manner as this process is a human rights issue. This, in fact, is the reason why SARChI-DE found it appropriate to use the concept of cognitive justice as opposed to the concept of cognitive imperialism, which had subjugated the right of different forms of knowledge to survive creatively and sustainably. Cognitive justice in this context should be understood in the following two different ways, namely: as respect for the knowledge system but also as an understanding for life forms, livelihoods and a way of life. Cognitive justice can be understood on the basis of the suggestion that the transformation of the curriculum should not imply a removal of the theory of the West in knowledge production but, instead that, a theory of the West must be developed within the confines of an alternative vision of the world, namely, the indigenous vision of the world.

Restorative justice: Restorative justice should be viewed against the background that the liberal paradigm imposed on African communities has undermined the hermeneutic power of Africans to interpret the world through their own symbols - which has led to a crisis of meaning via life, person, and community. In realising the falsity of the dichotomisation of complex human relations by certain restraining epistemologies, communities are attempting to correct this under a system of restorative practices that include; justice, medicine, and cross-border restorative cultural activities through Afrikology. Hence, through practical means and community-centred interactions, the author works to demonstrate how communities are moving away from the perspective of African “victimhood” and cultural pluralism by experimenting with cultural clusterism, adapted to the epistemology of ‘thinking from the heart’ as an approach towards renewed community-centred empowerment, and restorative cultural intellectualism.

the first step on the road to constructing cultural defences of the mind, outlined through our cultural conversations is in the creation of concepts and meanings besides what colonialism has bestowed. Thus, the ordeals of imagination undergone by culturally violated communities that have survived colonialism, cultural genocides and enslavement and imperialisms should find space, and inform our understanding of human solidarity under impossible conditions. By incorporating Afrikological notions of human solidarity which are based on the assumption that all people share a common underlying humanity, we looked further and pictured the symbolic cultural and social resources such as clusterism for negotiating a politer human identity. As we take this further, a more profound form of tolerance emerges which resides in the capacity to develop respect, understanding and mutual recognition of others, because it simply makes good cultural sense. Our attention would not normally be drawn towards community narratives as holding the promise, potential or epistemological lessons of Afrikology and restorative cultural action in communities

It is hoped that the contributions from this study, together with the new emerging concepts highlighted above, may advance the course of the transformation of the curriculum for basic education in South Africa and also result in an improvement in the lives of local communities in terms of transforming their local knowledge into a knowledge based economy that may contribute towards developing creative solutions to world problems such as, among others, climate change, food security and youth unemployment., and poor quality education in some instances in countries like South Africa as reflected in the TIMMS Report 2012 in this study.

Globally, the thesis explores the experiences of South Africa and Canada on the issue of the integration of IKS in the transformation of the curriculum for examining possible lessons that can be shared to bring the marginalised knowledge systems to the fore. I am using the immersion approach and TbE that has been introduced by SARChI to propagate for the emergence of new concepts in transformative education. I conclude that by adopting IKS policy, South Africa is opening the pathway to cognitive justice globally

7.5 UNIQUE CONTRIBUTION OF THE RESEARCH

The study makes a contribution to the foundation phase of the DBE and suggests both structural practices and implementation changes in the revision of IKS integration into the curriculum for basic education in South Africa. The study also, highlights salient issues that contribute to the dysfunctional integration of IKS into the curriculum for basic education, namely, the silent voices of the elders and indigenous learners (IL) as well as indecisive attitudes on the part of the teachers who have been trained in the Western paradigms that see no value in IKS. Thus, in essence, the study highlights the problems experienced by both teachers in the classrooms as a result of their reluctance to including indigenous content in their teaching, and policy implementers who have not devised a comprehensive guideline to the revision of a policy that is transformative in respect of the integration of IKS into the curriculum for basic education in South Africa.

The limited definition of IKS in South Africa emerged as one of the contributory factors to the fact that the task of transformation of education has been left to the teachers who randomly apply any type of method pertaining to the indigenisation of the curriculum, thus reducing the process of the indigenisation of the curriculum to mere tokenism.

Policy reviewers and teachers are invited to engage with the theoretical information, that is, transformation by enlargement, on the revision of the policy on the integration of IKS into the curriculum for basic education. The study hopes to help narrow the gap between the functional application of the integration of IKS into the curriculum for basic education with reference to the conceptual approach of transformation by enlargement within the curriculum in relation to which, despite existing policies for the implementation of the integration of IKS into the curriculum, teachers, in particular, find it impractical to implement the said policies due to the lack of a clear directive from the DBE on the mandatory course. The field of the philosophy of education, as well as curriculum studies, and development studies in South Africa may be enriched with guidelines for revising IKS integration into the curriculum, as suggested in this study, and utilised for collaborative partnerships.

In both South Africa and Canada, the political conviction is that Truth and Reconciliation commissions are the only humane way of correcting the injustices of the past. Education is perceived as the only meaningful tool with which to undertake this task based on the following strategies:

- Undo the injustices of colonial education
- Work with indigenous people as all indigenous people worldwide face the same issues and, thus, it is vital to empower all cultures.
- Reconciliation must be rendered effective in the schools by means of cultural responsiveness. For example, in South Africa this may take the form of the spirit of, Botho, Ubuntu through restorative justice and, by acknowledging our mistakes and then reaching an agreement on how to move forward in a positive way.
- The DBE taking ownership of reconciliation.

7.6 CONCLUSION

This study involved a long and challenging journey which started with accessing data with using the in-depth desk research method for reasons that constituted limitations to the study as I was not able to conduct fieldwork for reasons already explained. In- depth desk research is a fairly new approach to academic research and it may be an extremely tedious exercise which requires the researcher to be decisive in terms of what he/she is intending to explore because there is a massive volume of data available online which must be navigated with a precise intent. I had to present the intended study in its preliminary stages to the SARChI-DE community during quarterly peer reviews and during the yearly retreats to the SARChI-DE Circle of Elders and international fellows for purposes of intense critique and adding to guidance in shaping the course of this study to its completion.

The experience was tedious but also fulfilling as I had to search for specific literature and texts in order to learn about the experiences of both black South Africans under apartheid with its Bantu education ideology and the indigenous people of Canada in the residential schools, and also, briefly, experiences elsewhere on the integration of IKS into the curriculum. I embraced the praxis of the IPs of countries such as Canada in their remarkable attempts to integrate IKS into the curriculum for education. This, in turn, provided me with direction in making suggestions for policy makers, elders, pre-service and in-service training for teachers and the Department of Basic Education in South Africa. In the final analysis, it may be said that the attempts made by this study were in the context of a political game. It was indicated in the background to this study that the institution responsible for the formalisation and legitimisation of alternative knowledge is the DST in South Africa before such formalisation and

legitimisation may be adopted by the cabinet of South Africa and, for this reason, it is a political game that must be won.

6. For a full discussion of these principles see Llewellyn and Howse (1998): About Truth Commissions and Restorative Justice. According to **Llewellyn and Howse (1998)**, the main elements of the restorative process involve voluntariness, truth telling and a face-to-face encounter. Consequently, the process should be completely voluntary for all participants

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9. Appendix



COLLEGE OF EDUCATION RESEARCH ETHICS REVIEW COMMITTEE

14 September 2016

Ref : 2016/09/14/35253614/38/MC

Staff: Ms KZ Moichela

Staff Number : 35253614

Dear Ms Moichela

Decision: Approved

Researcher: Ms KZ Moichela

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Supervisor: Prof. CAO Hoppers

College of Graduate Studies

Tel: +2712 337 6064

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Proposal: International experiences of the integration of indigenous knowledge system in the curriculum for Basic Education: Lessons for South Africa

Qualification: D Ed in Philosophy of Education

Thank you for the application for research ethics clearance by the College of Education Research Ethics Review Committee for the above mentioned research. Final approval is granted for the duration of the research.

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the College of Education Research Ethics Review Committee on 14 September 2016.

The proposed research may now commence with the proviso that:

- 1) The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.*
- 2) Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the College of Education Ethics Review Committee. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.*
- 3) The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and*



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